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ABSTRACT

The effect of a structured program of musical training on the musical abilities of preschool children from disadvantaged environments was investigated. It was hypothesized that, if the musical abilities of such children could be improved sufficiently, they might then be able to enter elementary school on a level commensurate with that of their more fortunate peers. The project was conducted in three phases: pretest, instruction, and posttest. During the pretest phase, each child was given an individual musical concept performance test to determine his initial level of musical ability. The disadvantaged children were also given an individual Stanford-Binet Intelligence Test. Four groups of children were employed: two advantaged and two disadvantaged. One of the advantaged and one of the disadvantaged groups served as control groups, and the other two were exposed to a 20-lesson series of musical concept instruction. After the training phase, the same test as used in the pretesting phase was employed for posttesting. A two factor A x B design was employed for the analysis of the simple, main, and interaction effects. Marching, clapping, and rhythm echo games were effective techniques for teaching rhythm concepts. The results suggest that such a structured program effectively raises the level of musical ability of both disadvantaged and advantaged children. (Author/CK)

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A STUDY OF REMEDIAL PROCEDURES FOR IMPROVING THE LEVEL OF MUSICAL ATTAINMENT AMONG PRESCHOOL DISADVANTAGED

William T. Young

Stephen F. Austin State University

Nacogdoches, Texas

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SUMMARY

The present study was designed to investigate the effect of a structured program of musical training on the musical abilities of preschool children from disadvantaged environments. It was hypothesized that, if the musical abilities of disadvantaged children could be improved sufficiently, they might then be able to enter elementary school on a level comensurate with that of their more fortunate counterparts. Further, if such initial improvement could be induced, significant alterations in subsequent patterns of musical growth might result which, in time, could conceivably eliminate or substantially reduce the effect of the cummulative deficit process.

The project was conducted in three phases: pretest, instruction, and posttest. During the pretest phase, each child was given an individual musical concept performance test to determine their initial level of musical ability. The disadvantaged children were also given an individual Stanford-Binet Intelligence Test.

Four groups of children were employed; two advantaged groups and two disadvantaged groups. One of the advantaged and one of the disadvantaged groups served as control groups and the other two were exposed to a twenty lesson series of musical concept instruction.

After the training phase, the same test as used in the pretesting phase was employed for posttesting. A two factor A x B design was employed for the analysis. The simple effects, main effects, and interaction effects were analyzed and reported. The two experimental groups were compared in terms of time to learn, amount of learning, performanc e on the posttest, and gain scores. In addition a subjective evaluation of the program was presented, based on the collective impressions recorded by the instructors as the project progressed.

The results of the study suggested that a program such as the one employed was effective for raising the level of musical ability of disadvantaged as well as advantaged children. The final posttest scores of the disadvantaged-experimental group were not significantly different, at the .01 level, from those of the advantaged-control children.

Certain specific techniques and procedures, such as marching, clapping, woodblock, drums, rhythm sticks, and rhythm echo games were found to be suitable for teaching rhythm concepts while others such as, walking, running, sandblocks, maracas, bongo drums, etc. were much less appropriate.

In like manner, handsigns, melodic echo games, step bells, and the baritone ukulele were found to be particularly useful for presenting melodic concepts.

Some techniques were developed and proved useful for remedial teaching of the non-singer, the uncertain singer, and the reluctant singer, and are described in the main report. The hyperactive singer was also successfully taught. Only those children who appeared to be severely emotionally disturbed failed to respond to the techniques employed.

The Hill Primary Music Ability Test was employed for pre and posttesting and proved to possess high statistical reliability. In terms of this test, the two experimental groups made extremely large gains while the control groups made no significant progress. In terms of final score there was no significant difference in the scores of the disadvantaged-experimental and the two advantaged groups. There was however, considerable difference in the scores of these three compared to the disadvantaged-control group.

The growth patterns of the two experimental groups appeared to be the same, the one difference being the disadvantaged group started much lower on the scale than did the advantaged children. The fact that the overall patterns appeared to be alike led to the conclusion that intensive remedial training might serve to aid the disadvantaged in reaching the level of ability of the advantaged children. Apparently, at this age, the effect of disadvantagement is not permanent.

The voice range common to most children was found to extend from E-flat (treble staff, first line) up to A-flat (second space). Moreover, it was discovered that more children sang accurately in the minor mode than in major.

The relationship of several non-musical factors to the children's progress was investigated. Of these, mental age was positively related to the progress of the two disadvantaged groups but the coefficients were small (.15 and .24). Attendance was seen as a factor in the progress of the disadvantaged-experimental children but not with the advantaged-experimental group. Chronological age and intelligence seemed to have little relationship to either amount of gain or final ability level.

It was found that the results obtained by a trained, experienced teacher were similar to those obtained by relatively untrained teachers. This fact suggested that perhaps the music program could be employed in other schools by minimally trained personnel with only occasional supervision. One of the recommendations for future work in the area involved formulating a manual for teachers in Headstart Centers and the holding of short term workshops for their familiarization with methods and procedures.

The overall assessment of the study was one of success. The method of teaching proved to be effective for the purpose. Also gratifying was the prospect that perhaps the effect of disadvantagement on preschool youngsters is not permanent and can be overcome if the remedial process is initiated early enough.

Chapter I

INTRODUCTION

In many of the educational systems of the world, particularly those of the Western nations, music has long been recognized as an important means of acculteration. Some evidence to substantiate this thinking can be found in the widespread inclusion of music study in the school curriculums of these countries. Music education has been especially prominent in the United States since the early part of the nineteenth century, and continues to be taught in some form in almost every school. While it is true that opinions have sometimes differed as to the importance of music as part of the public school system, few educators would deny some form of musical experience to the children in their charge.

The maximal benefit from music study is generally obtained by those students who possess certain musical skills and knowledge at the time they enter school. These skills and knowledge, sometimes called musical aptitude, are considered by most educators as a product of environmental influences and inherited potential. The students with greater aptitude are thus the ones who are logically in a position to make the most of any exposure to music, since they are better able to assimilate new experiences within the context of their previous learning. Conversely, those students who do not possess these skills and knowledge benefit to a substantially lesser degree from new musical experiences.

Environment. The importance of environment to the early musical development of children has been investigated on numerous occasions. Reynolds, 1/ in an investigation of the singing ability of 85 kindergarten children, reported that home environment was a significant factor in the singing ability of children at that level. Of particular importance were a good library of children's records in the home, a phonograph, and the possession of a piano. In a similar study, Kirkpatrick 2/ investigated factors related to the singing ability of 116 kindergarten children and reported essentially the same findings. In addition, he applied the Warner Index of Status Characteristics to the population and found a level of significance with a probability of .005 between this index and singing ability. Petzold 3/ in a study of the auditory perception and singing ability of children, developed an information sheet to evaluate the quality of musical experience in the home. Using a sample of 505 children from grades one through six, he classified their home musical

experience into upper and lower quartiles. Subsequent significance tests applied to the data revealed differences between those groups classified very high and very low.

These studies all serve to illustrate a common point. That is, children who demonstrate higher musical ability in the early years of school, generally come from homes in which music is an important factor. While some of these studies (notably that of Kirkpatrick) attempted to determine the effect of socio-economic status on the level of musical ability of children, none of the investigations included children from deprived backgrounds, or if they did so, no attempt was made to identify them or to investigate their abilities separately.

The Hill Study. One research study has recently been completed which does deal with differences in musical abilities of children from deprived and advantaged backgrounds. Hill 4/ using a sample of 614 students in grades kindergarten, first, fourth, fifth, and sixth, selected equally from deprived and advantaged areas, found that there were significant differences in the musical ability of children from the two backgrounds. He also found that, although not statistically significant, there was a tendency for these differences to become greater through subsequent grade levels. This phenomenon, commonly referred to as the "cummulative deficit" factor, led the investigator to conjecture that not only did children from deprived areas begin school with less musical ability but that it was quite likely that the disparity between their ability and that of children from advantaged backgrounds increased as they progressed through school.

There is nothing a teacher in school can do toward altering the home backgrounds of the children who enroll in school. These influences as well as the effects of heredity, are beyond her control. However, there may be a great deal that can be done through the use of remedial teaching techniques toward altering their level of musical ability. Such remedial teaching techniques have been shown to be effective in raising the achievement level of individual low ability students within classrooms, thus, it seems logical that similar techniques might prove effective in improving the musical ability of entire groups of students.

The disadvantaged child. As employed in this study, the term disadvantaged refers to an environmental situation. Basically, the circumstances associated with such an environment are the direct result of prolonged economic deprivation. Poor, or inadequate housing, nutritional deficiency, large numbers of siblings, and seemingly little or no prospect of immediate improvement in material comforts are commonly observed characteristics.

Far more subtle, but involving ramifications which are potentially more explosive are the social dynamics of such an environment. Primarily, this involves social isolation by the rest of the community based on differences in community, religious, moral, and ethnic values. The disadvantaged individual usually distrusts governmental agencies and activities, fears law enforcement, has less respect for personal property and established social amenities, practices little emotional self-control, and is often below average in intelligence. These manifestations generally serve only to further intensify the social isolation of which he is so resentful.

Another product of an economically deprived environment is a kind of cultural disadvantage. This is a direct result of insufficient exposure to the esthetic aspects of the culture, coupled with a pronounced lack of opportunity and sometimes even less inclination to rectify this deficiency. In the specific instance of music, this disadvantagement produces a child who is unable even to sing a simple melody. He seldom tries to sing himself, and has never been sung to as an infant. He also displays little or no sense of rhythm. Often his home has no television or radio. In short, he has been reared in a musically sterile environment.

Purpose of the Study

The present study was designed to investigate the effect of a structured program of musical training on the musical abilities of preschool children from disadvantaged backgrounds. It was hypothesized that, if the musical abilities of disadvantaged preschool children could be improved sufficiently, they might then be able to enter elementary school on a level comensurate with that of their more fortunate counterparts. Further, if such initial improvement could be induced, significant alterations in subsequent patterns of musical growth might result which, in time, could conceivably eliminate or substantially reduce the effect of the cummulative deficit process.

A second purpose of the study was to compare the musical development of disadvantaged and advantaged preschool children in terms of time to learn, amount of learning demonstrated, the apparent effect of various teaching techniques, and to make these comparisons in structured teaching situations as well as in those in which the musical development of the children was less formal, or left to chance.

A further purpose of the study was to ascertain the apparent relationship of selected factors to the aforementioned aspects of musical growth among disadvantaged children. The factors considered were (1) mental age, (2) chronological age, (3) intelligence, and (4) initial musical ability.

Lastly, it was of considerable interest to determine whether teachers, who were relatively untrained, could initiate and sustain a successful program of music instruction with only a minimum of supervision from a person more extensively trained in the field of elementary music teaching. It was reasoned that if the techniques and procedures could be so structured that an untrained teacher could obtain results which would compare favorably with those of a trained music educator, the initiation of similar programs in other preschools could then be justified.

Design of the Study

The project was conducted in three phases: (1) Pretesting phase, (2) Training phase, (3) and Posttesting phase. During the pretesting phase, each child was given an individual music achievement test in order to establish his initial level of musical attainment. After these scores were obtained, a training period was initiated in which one disadvantaged group of children and one advantaged group were taught by identical techniques. These groups formed the two experimental groups. A second pair of preschool groups (one disadvantaged and one advantaged) were pretested but were not trained. These served as the two control groups. After the training period, a posttest (the same as that used for pretesting) was administered to all four groups.

A two-factor A x B design (read A by B) as described by Lindquist 5/ was employed for the analysis. This design provides for the investigation of the presence of interaction, the main effects of environment, the main effects of teaching method, the simple effects of environment on musical development where teaching was done and where it was not done, as well as the simple effects of training on the musical development of preschool children from disadvantaged and advantaged backgrounds.

The counterbalanced design is illustrated on the following page.

Teaching Method

Environment	Structured	Unstructured
Disadvantaged	Preschool One Disadvantaged Experimental N = 32	Preschool Three Disadvantaged Control N = 32
Advantaged	Preschool Two Advantaged Experimental N = 32	Preschool Four Advantaged Control N = 32

Figure 1.

LINDQUIST A x B STATISTICAL DESIGN
EMPLOYED IN THIS STUDY

Rationale

The rationale behind this study is based on two principal premises. The first is that music has value for all persons regardless of what talents or aptitudes they may possess in other areas. Further, that these values are unique and cannot be obtained through any other medium. It therefore follows that, those individuals who are unable to participate in musical activities or to enjoy the benefits of musical knowledge, because of circumstances over which they have had no control, are, in fact, being deprived of an aspect of human existance which should rightfully be theirs. The second fundamental premise is the belief that everyone has the capability of becoming a musically intelligent person., and this capability should be cultivated as an integral part of each person's overall development.

The value of music to the individual. Music is an important form of entertainment but by far the most important value of music to the individual is in the area of esthetics. Through adequate guidance in this area, the child (and later the adult) can learn to appreciate many varied types of music and make an intelligent choice of the type he wishes to hear and perform. This view is shared by the American Association of School Administrators: 6/

> "It is important that pupils, as a part of general education, learn to appreciate, to understand, to create, and to critisize with discrimination those products of the mind, the voice, the hand, and the b[illegible] which give dignity to the person and exalt the spirit of m[illegible]

This kind of learning involves an understanding of the relationship and the function of balance, form, contrast, tension, color, texture, mood, dynamics, tone quality, and other specific musical elements. Only through comprehension of these elements can the individual attain a true appreciation of music, rather than the false sense of values sometimes acquired through such non-musical learnings as the composers' dates or trivial facets of their personal lives.

The esthetic value of music can hardly be underestimated, if as Nye and Nye have said, "the elementary child of today is to be a composer, critic, and researcher, as well as a performer of music." 7/

A second important value of music study for the individual is the knowledge it provides for the understanding of his own culture. Music

is all around us today. We hear it in our homes, in our churches, in our schools, in our automobiles, in many of the stores where we shop, and numerous other places. With the advent of the portable transistor, it is indeed difficult to find a location where one does not hear music for any length of time. Music is a part of our culture and for this reason it is important that we understand it. It is not only important to comprehend the music of today but it is also important that we gain a knowledge of the music of the past, since it is this music which has enabled us to have the type of music we have in our culture today. For example, our understanding of American jazz is enhanced if we are also aware of the Western European harmonic tradition upon which it is based, the organization of triple-duple meters of the Middle Ages combined with the syncopated rhythm patterns of West Africa which provide its distinctive beat, and the improvisational techniques influenced by the social-emotional conditions of the latter nineteenth century in the United States, which contribute toward the refreshing uniqueness of its sound.

A third set of values involves music as an avocation, or for some, a vocation. For the individual who derives his sustenance from some aspect of the music industry, it may have vocational value, but for the majority, music is of value primarily as an avocational activity. The ability to perform, at least to a small degree, can provide a means of recreation which can circumvent barriers created by ethnic, religious, or political divisions. The ability to "make music" is present in all individuals and should be cultivated as a part of their social and psychological development.

In addition to these unique values of music, there are numerous personal and social attributes toward which the development of music may make an important contribution. Such things as self-assurance, a feeling of success, lessening of tensions, physical health, group cooperation, social contacts, respect, self-discipline, etc. are well known and need not be reiterated.

The musically intelligent person. The term intelligence connotes understanding which in turn is generally the result of some type of formal learning. Probably one of the basic aspects of musical intelligence, or understanding, is the ability to read. The ability to read music has often been compared to the ability to read a language. Many writers have drawn the analogy of the sixth grade teacher who must read the textbook to the students because they are unable to read it themselves and the sixth grade music teacher who must sing or play each song for

the class because they cannot read it. To the music educator, one is as ridiculous as the other, but yet too often we abhore the first but accept the second.

The teaching of music reading is, in many instances, more easily accomplished than the teaching of language reading. The basic approach is the same, that is, the learner must hear the sound and associate it with a known object before he is presented with the visual symbol. For example, learning to read the word elephant is greatly facilitated by having previously heard the word, being able to say the word, and associating it with the animal itself. In like manner, reading a musical rhythm pattern, such as is greatly facilitated if the learner has heard the pattern previously, has used it in a song, and can verbalize it with rhythm syllables.

There are often other factors involved in the development of a musically intelligent person such as experience with all kinds of music, appreciation of a good performance, etc. however, most are enhanced by the ability to read. Moreover, the individual who is able to read music can progress into other musical areas of his own choosing without a great deal of assistance.

The Early Childhood Music Program

The organization of the preschool music program may be approached in two general ways. One of these might be called the "functional approach", in which the greatest importance is attached to what can be done with music, while the music itself is secondary. The second approach might be designated the "musical concept approach", in which the greatest emphasis is placed upon the development of the child's musical abilities. The former approach might be regarded as "teaching with music" and the latter as "teaching about music."

The Functional approach. Under this approach, the people responsible for the development and operation of preschool programs tend to look upon music as merely a tool which may be used to teach other concepts. Songs are employed which have texts dealing with weather, animals, community activities, or some other subject the teacher wishes to emphasize. At other times, recorded music is used as a "break" in the learning process, for the relaxation or the physical development of the children. Since the advent of the Montesorri concept of teaching, educators have become increasingly aware of the potential for learning certain skills and knowledge through participation in seemingly unrelated activities. Numerous games and items of equipment have been designed and marketed, all based on this idea. The use of music as a medium for the presentation or reinforcement of non-musical learnings is simply a further application of this philosophy. While activities such as these may serve a useful purpose in the preschool classroom (and are justifiable on this basis) they do not constitute a program of music instruction although they are often substituted for one.

The Musical concept approach. With this approach, the child's musical abilities are first examined. These abilities, or musical aptitudes, are systematically developed through the presentation of musical concepts, the pace of which is governed by the child's learning rate. In addition, all music employed in the classroom, regardless of the purpose for which it is intended, is selected on the basis of its appropriateness to the child's current stage of musical development. A point which is sometimes overlooked by some educators is that, unless the songs, recordings, and techniques used in the classroom are first considered for their musical value, little if any positive musical learning may result. Indeed, the end product may well be a suppresion of the child's musical potential, rather than the development of it.

The Approach employed in this study. The music program followed in the present study was organized around the musical concept approach.

While there are several concept areas which might be developed, the facilities available and the purpose of the study seemed to suggest the use of two: rhythm and melody. These are generally regarded as the primary constituents of music. Without an aural understanding of these two elements, the later development of an esthetic appreciation of music, or, progress in music reading, both of which are so vital to the musical development of the individual, are delayed, or in many instances never begun.

The concept areas and their subdivisions, introduced to the children in this project, are outlined below and discussed in detail in the third chapter.

The Concept of Rhythm
- The feeling for consistent tempo
- The feeling for triple and duple meters
- The feeling for melodic rhythm

The Concept of Melody
- The feeling for the tonal center
- The feeling for major and minor tonality
- The feeling for melodic interval

Footnotes for Chapter One

[1] George E. Reynolds. "Environmental Sources of Musical Awakening in Preschool Children." (Unpublished Doctoral dissertation, University of Illinois, 1960).

[2] William C. Kirkpatrick. "The Relationship Between the Singing Ability of Pre-kindergarten Children and their Home Musical Environment." (Unpublished Doctoral dissertation, University of Southern California, 1962).

[3] Robert G. Petzold. "The Development of Auditory Perception of Musical Sounds by Children in the First Six Grades." Journal of Research in Music Education, Volume XI, Number One, 1963. Pp. 21-43.

[4] John D. Hill. "A Study of the Musical Achievement of Culturally Deprived Children and Culturally Advantaged Children at the Elementary School Level." (Unpublished Doctoral dissertation, University of Kansas, 1969).

[5] E. F. Lindquist. Design and Analysis of Experiments in Psychology and Education (Boston: Houghton Mifflin Company, 1956).

[6] American Association of School Administrators. Report of the annual meeting, 1968-69. Resolutions section 5: Creative Arts, p.248.

[7] Robert Nye and Vernice Nye. Music in the Elementary School. Englewood Cliffs, New Jersey:Prentice-Hall, Incorporated. 1970. P.7.

CHAPTER II

METHODS

The study was conducted in the cities of Nacogdoches and Lufkin, Texas. These communities are located in the eastern portion of the state. East Texas often called the "Piney Woods" area, is heavily forested with Pine, Cedar, and other coniferous trees. Lumbering, wood pulp processing, and other industries directly or indirectly related to the marketing of wood products provide the principal source of income for the area. Cattle raising, marginal farming, and light manufacturing also contribute to the local economy.

Selection of Subjects

An equal number of subjects was randomly selected from each of the four participating schools. As finally constituted, each group included thirty-two preschool children. The four participating schools are described in the following paragraphs:

(1) Community Action Child Development Center (Headstart) of Nacogdoches, Texas. Mrs. Zelma Harris, Director. The total enrollment of the school at the time of the initiation of this study was 58 children. These children were all from low income homes. Many of the parents were laborers or unemployed and receiving some form of public subsistance allowance. Often the families contained large numbers of children and many had only one parent (the mother) in the home. Ethnically, approximately half of the children were of predominantly Negro ancestory and the others were Caucasian. The children selected from this school were designated as the disadvantaged-experimental group.

(2) The First Baptist Kindergarten of Nacogdoches, Texas. Mrs. Ross B. White, Director. The enrollment of this school at the beginning of the project was 38. The parents of the children were either skilled laborers, professional people, or local businessmen. Most of the children came from moderate or small sized families and were generally better clothed and possessed more material goods than the children in the disadvantaged groups. Ethnically, the children would all be classified as Caucasian. Those selected from this school comprised the advantaged-experimental group.

(3) The Day Care Center of Lufkin, Texas. Mrs. Ezel Jones, Director. The enrollment of this school totalled 69 at the beginning of the project. The home backgrounds of these children were generally characterized by large families, a father (where there was one) working as a laborer, a mother who worked as a domestic worker, and comparatively low income per family unit. There were some notable exceptions to this pattern. A few of the parents were skilled or professional workers (secretaries, nuuses, teachers, etc.) A few of the children in this school displayed physical characteristics generally associated with Oriental, Mexican, or American Indian people, but all were either wholly or partially of Negro ancestory. The children participating in the project from this school were designated the disadvantaged-control group.

(4) Christ Episcopal Day School of Nacogdoches, Texas. The Rev. Michael C. Macey, Headmaster. The enrollment of this school totalled 39 at the beginning of the project. About eighty percent of the children were sons or daughters of University professors. All came from homes which could be described as comfortably equipped and economically advantaged. Ethnically, the children were all Caucasian. The randomlly selected group from this school comprised the advantaged-control group.

Pretest (Posttest)

There is no published, standardized, musical achievement test designed for use with preschool age children. One such test, however, has been developed and used with disadvantaged children. This instrument, while not nationally standardized, has been shown to possess validity for this purpose. 6/ When previously employed with preschool children, the test was reported to have a reliability of .95. It contains thirty-six items and is divided into six subsections, as follows:

1. Interval matching. (5 items of two notes each)
2. Unknown phrase imitation. (Ten phrases containing 3,4,5,6 or 7 notes each)
3. Tone matching. (10 items)
4. Song phrase repitition. (8 bars of "Jingle Bells;" "Twinkle, Twinkle;" and "Rudolph the red-nosed reindeer")
5. Tap recognition. (Rhythms of "Jingle Bells;" "Rudolph:" and "Mary hsd a little lamb")
6. Tap imitation. (10 rhythms of increasing length and complexity)

Consideration was given to the possibility of constructing a test specifically for use in this study. The advantages of employing a measuring instrument already proven effective with children of the age of those participating in the study, seemed to outweigh those to be gained by employing a new test. Therefore, the Hill Primary Music Abilities test was selected as the measure of the children's musical ability level. A complete copy of the test may be found in Appendix A.

Test administration. The test was administered individually to each child. The examiner introduced the test as a "game" which he or she was going to play with the child. The child was also told at that time he or she would receive a candy treat when the test was completed. There were only five incomplete tests in the pretest and posttest administrations.

Each test item was played on a song bell set by the examiner, then sung by the examiner. In this manner the child had two hearings of each item. The examiner then asked the child to try to sing the item. This complete process was repeated twice for each item. The entire test, including the examiners' presentations was recorded on magnetic tape for later evaluation. The childrens' best response for each item was used for scoring and the other disregarded. This procedure was employed due to the immaturity of the subjects and the desire to offset the possible influence of non-musical factors, such as shyness on the part of the children, nervousness, misunderstandings, and distractions. The testing time for each child varied but usually was 15 minutes. This time span was deemed sufficient for satisfactory test reliability but still was within the limits of attentiveness expected from children of this age.

Test evaluation. The pretests were administered during the month of February, 1970, within a two week period. The posttesting was accomplished in a similar length of time late in May of the same year. Both pre and posttest recordings were evaluated during the month of June, following the completion of the training period.

Scoring was done by evaluating the taped responses against the criterion items as administered by the examiners. Copies of the test were duplicated, one for each child. The child's response was then superimposed directly over the criterion item and a score relative to the similarity of the two was assigned. A possible 206 points on the total test were distributed as follows:

Hill Primary Music Ability Test, Point distribution.

M1 Interval matching ..... 20 points
Assigned on the basis of two points for each correct pitch. No allowance was made for singing the same interval on pitches other than those given.

M2 Phrase imitation (unknown)..... 96 points
Assigned on the basis of two points for each correct pitch. No allowance was made for incorrect pitches even if close to the correct ones.

M3 Tone matching..... 30 points
Assigned on the following basis: 3 points if the response was exactly the same as the criterion item; 2 points if it was a near as one semi-tone, either flat or sharp; and 1 point if it was as near as one whole tone. No points were assigned if the child's response was more than one whole tone away from the pitch of the criterion.

M4 Song phrase repitition (familiar) ..... 15 points
Assigned on the basis of five points for each selection. A general assessment was made of the similarity of the response to the criterion as presented and a score of 0 to 5 points assigned.

Total possible score for Melodic achievement ..... 161 points

R5 Tap recognition (familiar songs)..... 15 points
Five points for each item, assigned on the same basis as in the song phrase repitition section.

R6 Tap imitation (unfamiliar patterns) ..... 30 points
Assigned on the basis of three points for each item. If the response was exactly like the criterion as presented, three points were assigned; if nearly the same, 2 points; if only similar, 1 point; and if no resemblance was apparent, no points.

Total possible score for Rhythmic achievement..... 45 points

Composite test, possible score.....206 points

The Teaching Staff

Four persons were employed as instructors in the project. One had extensive training and experience in elementary music teaching while the others were relatively inexperienced and had undergone considerably less musical training. One of the intentions of the project was to determine the relative effectiveness of teachers with little preparation in music pedagogy, thus the selection of this type of staff was deemed appropriate.

One of the instructors was the principal investigator of the project. He was, at the time, employed as a university professor teaching music education courses. His previous experience included five years teaching elementary music in grades kindergarten through eighth and an additional eight years as a public school coordinator of music. In addition to teaching, his duties in the project consisted of outlining the lesson plans, conducting regular weekly meetings of the teaching staff, administering pre and posttests, evaluation of the data, and preparation of the final report.

The three other instructors were university students majoring in elementary education. One was a music minor and had received some theoretical musical training as well as practical. The bulk of the musical training of the others consisted of a college fundamentals of music course. None had previous music teaching experience with elementary or preschool children.

A fourth student was retained as a reserve teacher in case of the absence of one of the other instructors. As such she attended all staff meetings, and observed one of the other teachers at each lesson. She was also a university student majoring in elementary education and had approximately the same musical background as the two described in the latter part of the previous paragraph.

Elementary education majors were selected for two reasons. First, because they were elementary education majors, it was reasoned that they would be more interested in working with small children than any other group might be. Second it was desired to secure persons who had a minimum of musical training in order to determine how such a person might function using the materials and techniques prepared for the project.

Teaching Procedures

Groups of approximately ten children each were formed for music instructional purposes. Schedules were arranged so that all the disadvantaged groups were given instruction at approximately 9:30 and the advantaged groups one half hour later. The teachers would arrive at their appointed hour, call for their children and escort them to the room in which music instruction was given. When the music period was finished (approximately twenty minutes) the children would be escorted back to their room and return to their usual schedule. Music instruction was scheduled three days weekly on Monday, Wednesday, and Friday. It was originally planned to have music instruction daily but due to schedule complications, this was not possible.

At the beginning of the project, lesson plans were drawn up and each teacher followed the plans with each group. A total of twenty lessons were planned. General and specific objectives were formulated for each lesson and specific songs and procedures with which to implement them were included. The approximate point at which remedial procedures were initiated and musical concepts introduced are shown in Table 1. After ten such lessons were presented it became apparent that it would not be possible to keep all the groups together. Many of the children in the advantaged groups owned record players and very often were already acquainted with song materials being presented. This necessitated the use of alternate song materials. It was also found that because many of the advantaged children were accustomed to singing, they learned the songs faster than the disadvantaged children. In addition, a substantial amount of time was spent in teaching the children in the disadvantaged groups the use of their singing voices, performance of rhythms, and correcting various musical deficiencies which they had. This further limited the number of songs which they were able to learn.

It was, therefore, decided to abandon formal lesson plans as such and teach as many songs as each group was capable of absorbing. From this point on (Lesson Eleven) the amount of material presented to each group differed. The introduction of musical concepts and remedial procedures was carefully controlled, however, so that all groups were presented these elements at the same time. Appendix B contains the first ten lesson plans which were followed for all groups. Appendix C contains the list of song materials and sources which were used in these and subsequent lessons.

Each lesson was divided into five parts, the order of which could be varied by the teacher as she saw fit for her particular group.

Table 1.

OUTLINE SCHEDULE FOR THE INTRODUCTION OF MUSICAL CONCEPTS AND TREATMENT OF SPECIFIC PROBLEMS

Lesson	Problems	Rhythm Concepts	Melodic Concepts
1	Establish rapport	Encourage rhythmic freedom	Encourage melodic freedom
2	Begin identifying children with specific singing problems	Consistent tempo	
3	Stress pitch accuracy		Resting tone
4			
5		Meter; simple rhythm patterns	
6			
7	Begin correcting non singers		
8			Major-minor
9	Uncertain singers		
10			
11		complex rhythms	
12			
13			Tonal patterns
14	Reluctant singer		
15			
16			
17			
18			
19		Begin to visually identify learned rhythm patterns	
20			

The five areas covered in each lesson were as follows:

(1) Review of a known song stressing a musical concept previously learned. (Determined by each teacher on the basis of the needs of the group)

(2) Specific emphasis on rhythm (tempo, meter, or rhythm echo games to develop a repertoire of rhythm patterns)

(3) Specific emphasis on melody. (usually in the form of tonal echo games and pitch matching devices)

(4) Presentation of a new song.

(5) A song of the children's choice from previously presented repertoire.

Instructional Facilities

There were three rooms used for the musical instruction of the disadvantaged children. One was a former elementary classroom which had been converted into a Headstart Center. In the middle of the room a large geometric shape was laid out on the floor with adhesive tape. Periodically it was changed, such forms as circles, triangles, squares, etc. being used. The children would sit on these outlined shapes and the music teacher would sit on the floor among them. The other two rooms used for the music instruction of the disadvantaged were located in a church building. They were furnished as Sunday School classrooms with chairs and tables meant for adults. Here again, instruction was given on the bare floor with the teacher and the children sitting or standing.

The facilities for the advantaged children were purposely kept the same. One group was instructed in a chapel room, the children and the teacher sitting or standing on the floor. Two additional groups were instructed in their regular preschool classrooms and sometimes used the chairs in these rooms which were of appropriate size for the children.

In order to equalize instruction for all groups, the teachers were directed to disregard any blackboards, pianos, or other teaching aids that might be in some of the rooms and to use only those things which they brought to the lesson with them. In this manner, all children received the same type of instruction.

Other Musical Experiences

In addition to the music instruction provided by the teachers in this project, each school continued with the music program they had been accustomed to presenting. These are outlined below.

(1) Disadvantaged experimental school: This school had no music program as such during the time this project was conducted. They possessed a record player but very few records. Some records were played, the children sang with them, and opportunity was provided for individual listening by the children at a listening table.

(2) Advantaged experimental school: A "traditional" music program was offered on alternate days when the experimental teachers were not there. This consisted in the main of one of the teachers playing the piano while the children sang with it. No definite structure was apparent and no attempt was made to teach any specific musical concepts.

The use of the piano sometimes resulted in the children singing too loud which in turn fostered poor voice quality and caused them to sing flat. This activity necessitated some additional attention to voice quality and pitch work by the experimental teachers over and above that which was necessary with the disadvantaged group. However, the advantaged children learned more song material so the additional time spent on pitch and quality did not impair the total experimental program.

(3) Disadvantaged control school: This school provided infrequent singing experiences for the children accompanied by a piano. A small set of well worn rhythm band instruments was also available but used primarily for play purposes. There was no one at the school who was capable, or interested, in presenting a music program.

(4) Advantaged control school: This school provided a singing session accompanied by a piano at least twice weekly. During this period, one of the teachers played the piano while the children sang along, much in the manner of the advantaged experimental school described above. No planned program of musical concept teaching was carried out. Songs of seasonal interest or about animals, community, etc. were used, mostly as a "break" in the more strenuous activity of the school.

In addition to the musical experiences received at their schools, the advantaged children all had television or radios in their homes and most had access to both. Many also had record players for their use and a library of childrens records which they played and listened to with regularity. In contrast, the disadvantaged children, for the most part, did not have record players in their homes and not all had television and/or radios. Thus, the previous experience with music brought to the schools by the children from the two environments was exceedingly different.

Footnotes for Chapter Two

[8] John D. Hill. Primary Music Ability Test (Unpublished testing instrument developed for use with elementary and preschool children) Further information may be obtained by writing the test author: Dr. John D. Hill, School of Music, The State University of Iowa, Iowa City, Iowa 52240.

CHAPTER III

REMEDIAL TECHNIQUES: A SUBJECTIVE EVALUATION

The term "remedial" is generally applied to those techniques and procedures which are designed to alleviate a deficiency of some type, or, to remedy a specific condition which is considered detrimental to future development. In case of the disadvantaged child, all action taken to improve his musical ability is, in a sense, remedial since his initial level of attainment is considerably less than that of most children. The remedial techniques employed in this study, along with a subjective evaluation of their apparent effect, are described in this chapter. The basis of the evaluation presented is the opinion and comment of the teachers who participated in the project and represents their composite, considered assessment. The chapter is divided into three principal sections: (1) A description of those techniques employed for the improvement of group rhythmic ability; (2) those used to improve melodic ability; and (3) a discussion of individual differences encountered in the children along with various methods employed to treat these.

The Concept of Rhythm

Research and experience have shown that an understanding of rhythm is fundamental to all other musical development. Failure in music is more often attributable to the lack of rhythmic aptitude than to any other single factor. 9/ Rhythm, as pointed out by Gordon 10/ may be divided into three distinct elements: tempo, meter, and melodic rhythm. These were adopted as the musical concept areas which would be included in the rhythm portion of the present project.

The Feeling for Consistent Tempo

"Tempo beats" are the most basic rhythmic pulsations in music and were emphasized first. For purposes of clarification, this pulse might be thought of as the beat to which a band marches, the beat to which a dancer moves, or the beat to which people tap their feet when listening to music.

The feeling for a consistent tempo may be developed by marching, clapping, skipping, walking, or other large muscle movements. The sole

objective of these activities is to develop, in the child, the ability to perform these 'beats' in a steady, consistent manner. Without this ability, all other musical instruction is considerably less effective. Only through the ability to maintain a "steady beat" can the more advanced aspects of rhythm (and melody) be properly learned. An individual who performs tempo beats in an inconsistent manner will invariably experience difficulty in singing or playing with a group, resulting in his performing "the right sound at the wrong time."

Hand clapping. One of the better activities for inducing the concept of steady tempo was found to be hand clapping. Most of the children could do this easily and generally attained greater precision than was possible with movements which involved the entire body. Three variations of hand clapping were used.

(1) First, the children were taught a song. Then the teacher sang it, unaccompanied, and clapped the beat simultaneously. After the children understood the procedure, they were asked to join in. As they became more adept at singing and clapping the beat, the teacher dropped out more and more frequently to listen and allow the children to develop independence. When the children could perform the beats and sing the song without assistance, the teacher played a chordal accompaniment to enhance the musical sound and help maintain the pitch.

(2) A variation of the above was to have the children stand and sway slightly from side to side on the beat. Beat one was clapped to the left when the weight of the body was on the left foot, beat two was clapped to the right when the weight of the body was in that direction. This action was continued through the song. The result was something resembling the actions of some popular television singers. The children enjoyed this activity very much and it seemed to be especially effective for those who had difficulty maintaining a steady beat.

(3) The two procedures described above involved clapping on every main beat. A slightly more complex activity was employed in which the children were required to silently "think" or "feel" the beat but clap only on certain designated ones. For example, in singing "Pop Goes the Weasel" the children would conduct the beats until they reached the word "pop". On this word they would clap. This idea worked well from a point of motivation since none of the children wanted to be the one who clapped early, or late, and all would strive for an accurate performance. Another song which functioned well in

this manner was "Little Foo Foo Rabbit," the children clapping once at the point in the song where the word "bashing" appears.

Marching was a second method employed for developing the steady tempo concept. The procedure generally followed was to divide the class into two parts, one part marching while the other sang and clapped the beat. A variation was for the teacher to sing and play the rhythm on the ukulele while all the children marched and clapped.

Marching was found to be much less effective than hand clapping. This was probably due to two reasons: First, all of the children had not yet developed the necessary muscular coordination necessary for them to march in a given tempo. Second, many (probably due to some misdirected previous instruction) persisted in concentrating their attention on marching style rather than on the musical beat. They would imitate toy soldiers, high stepping horses, or some other step style and pay insufficient attention to the beat of the music. This, of course, served to negate the musical benefit of the activity, that of feeling a consistent beat. It was, however, an enjoyable activity for the children and allowed them to exercise and be creative. The activity probably should be included in preschool programs for physical education purposes but not primarily for musical purposes.

Marching also serves a useful purpose as a means of organizing the orderly movement of children. Marching to and from the music area was sometimes used during this project. Whether this was an aid to the children's musical development is problematical, but it greatly facilitated the orderly movement from place to place.

Walking and running was also tried as a means of developing a consistent feeling for the beat but neither was suitable for the purpose. Again, these activities are probably useful for physical development but serve no worthwhile function as a means of teaching music. Skipping is sometimes suggested as an aid to teaching rhythm by some authors but was not employed in this project since the majority of the preschool children had not yet acquired this skill.

Rhythm Sticks, were made from 5/8" dowels cut into ten inch lengths and also used as were drums, wood blocks, tambourines and other rhythm instruments. In general, the instruments which provided a distinct sound of short duration, and which were easily played by the children, were found to be best for the purpose. Conversely, instruments which produced less precise sounds, such as shakers, jingle bells, cymbals, etc. were much less useful.

Two types of rhythm sticks were tried. One, already described, made of hardwood dowels were vary satisfactory and the children enjoyed playing them. A second type was a commercial variety of the kind supplied in "rhythm band" sets. These were smaller in diameter and made of soft wood which produced a dead sound and were not liked by the children.

Initially, only three or four children were allowed to play instruments at one time. This procedure allowed the others to concentrate on singing the song which was being accompanied, and enabled the teacher to more easily identify those children needing assistance in tempo.

Drums. Different types of drums were employed with somewhat varying results. Probably the best liked, and the one which produced the best results was an elementary size conga drum. This drum, as purchased, is provided with a strap which passes over the child's shoulder and leaves his hands free to play. To beat this drum involved essentially the same physical motions as hand clapping and was found to be as well suited as the former for developing the consistent tempo concept.

A second type of drum was an elementary size bongo set. These consist of a pair of drums connected by a small strip of wood. When rhythm instruments were used, a selection of three or four was always laid out and the children allowed to select the one they wished to play. Initially, the children selected the bongos but they soon discovered that these were difficult to play and hold. After a few trials, the bongos were rarely selected. While bongos are designed to be played by the hands and/or fingers, sticks were also used but neither method of playing was successful.

Small single drums, held in one hand by a strap, and played with a stick held in the opposite hand were also employed for teaching tempo. These were successful although not as well liked by the children as the conga drum.

The tambourine was another highly effective instrument for this purpose. Probably because many popular singing groups accompany themselves with this instrument, it was readily accepted by the children. In addition, the precise sound obtained and the fact that it was easily played probably also contributed to its acceptance. The best way of playing seemed to be by striking the head of the instrument with the hand. A second method, that of slapping it against the thigh, was also used but was not quite as effective for teaching consistency. However, it was an enjoyable variation for the children.

Woodblocks were also found suitable for teaching tempo. Two types were employed, a round type with a handle commonly found in commercial elementary rhythm band sets and an oblong shaped professional model. Both were held and played in the same general manner and equally satisfactory results were obtained with both types.

The cowbell was also found to be a satisfactory instrument for teaching this concept but the children generally selected other instruments before this one, when given the opportunity. Nevertheless when played by a metal striker, it produced a precise clear sound and could be played accurately by the children.

The autoharp was also used as an aid in teaching rhythm. When used for this purpose, the teacher fingered the correct chords while one of the children strummed the strings on the tempo beat. This instrument was particularly good for this purpose since it allowed the teacher to immediately assist the child, if necessary.

Nail chime. Various types of teacher made instruments were also experimented with during the project. Among these were drums made from oatmeal boxes, coffee can drums, shakers, pie plate tambourines, and others. One of the most useful of these for teaching rhythm was a nail chime made of two ten inch spike nails attached to the ends of a strip of ribbon. This instrument devised by one of the teachers was held in one hand by the ribbon so that one nail hung freely. The other hand grasped the other nail and struck the first. This produced a pleasing chime like sound and was a favorite with the children. In general, nowever, they preferred the better quality commercial instruments over the teacher-made models.

Rhythm band. A so-called "rhythm band" was employed on a single occasion to compare the results obtained with the method usually employed of allowing only three or four children to play at a time. A rhythm band typically consists of a conglomeration of various beaten and shaken instruments. Sets of these instruments are sold by many firms and are supposedly suitable for teaching rhythm. This was found to be a false assumption. The variety of sounds produced served to obscure the beat even when the songs were "orchestrated". In addition, many of the instruments provided in these sets are of poor quality and the children do not like to play them. The rhythm band activity, however, is generally an enjoyable one for the children and should be included in preschool programs as a recreational activity, not as one for teaching musical concepts.

The Feeling for Triple and Duple Meters

The second area of rhythm to be introduced was that of meter. While it is true that music may be written in a variety of meters (2/2, 3/4, 4/4, 5/8, 12/8, etc.) it is heard only as duple or triple and it was only this difference which was emphasized in the program.

Changing the meter of a known song. One method used to introduce this concept was to perform a given song in its original meter, then in the opposite meter. For example, the song "Hickory, dickory, dock," which is normally in triple meter, was sung in duple. In like manner, "Paw paw patch," which is usually sung in duple meter was changed to triple in order to demonstrate the difference. It was found best to let the class listen to the teacher sing in the different meters rather than try to teach them two meters for the same song. Alternately the class sang in the familiar meter and listened to the teacher sing in the opposite meter. Periodic "games" were played in which the teacher sang small portions of known songs in either meter and the children were to identify which meter they heard. This proved to be a good way of identifying those who needed extra assistance on this concept.

Clapping was a second method employed for developing this aspect of rhythm. By slapping their knees on the tempo, or main beats, and clapping their hands together once for duple and twice for triple on the intervening meter beats, the distinction between the two was quickly acquired.

Ensemble clapping, with part of the group clapping just the tempo beats and the remainder clapping the meter beats was also used but due to the similarity of the two sounds, was not as effective from the children's standpoint. Another variation was to have all the children clap the meter and sing the song. This was a similar sound to the "soul clap" sometimes encountered in popular music.

Rhythm instruments. Playing two different rhythm instruments, one on the main beat and one on the meter. This worked very well especially when two instruments were selected which produced opposing sounds so that a clear distinction could be heard between the two rhythms. All of the instruments described under the concept of tempo were also used for developing the concept of meter.

Sandblocks. These instruments were used to play the duple meter rhythm as a background for the train songs, of which there were three used. Only moderate success was obtained using these instruments. Perhaps the instruments were a little too difficult for the children to play at their

particular stage of muscular development and coordination. Again, it may have been due, at least partially, to the fact that none of these children had ever heard a real steam engine and none (including the advantaged group) had ever ridden on a train and therefore, they did not understand the underlying rhythm of a moving train. Only those who had television sets and had seen a train on a western program had any idea at all how a train should sound.

The Shaker and the Guiro. These two instruments should be mentioned for their singular lack of success. The shaker used was a large painted Mexican instrument which was made of light wood and filled with beads that rattled when the instrument was shaken. The guiro was a large gourd, hollowed out and scored on one side. It was played by scraping a small wooden stick across the scored portion. Both instruments were brilliantly painted and were attractive to the children the first time. However, a steady meter rhythm could not be maintained by any of the children and they quickly lost interest in playing them. Maracas were also tried but they were not a success either.

The Feeling for Melodic Rhythm

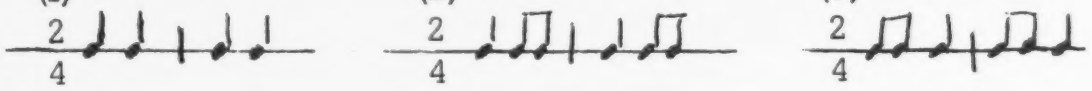
Simply expressed, melodic rhythm is the rhythm of the tune or the text of a song. In most elementary songs, these are one and the same. One method of developing a feeling for melodic rhythm was the use of speech rhythms. Unison recitation of song texts, nursery rhymes or other suitable poetry was employed for this purpose.

Echo games. In an echo game, the teacher presents a short rhythm pattern which is repeated by the students as an echo. These may be performed verbally, with rhythm instruments, by clapping or by stamping the feet. Two types were used, one in which the teacher presented the pattern and an individual student responded, and one in which the teacher presented a pattern and the group responded. The use of echo games was an enjoyable experience for the children and a short period of time was devoted to these daily. The object of echo games is to develop the ability of the child to hear and remember various rhythm patterns.

The establishment of a rote vocabulary of melodic rhythm patterns is a precursor to the later introduction of music reading in the elementary school. Once the patterns are recognizable to the children and they can verbalize them through the use of rhythm syllables, they are then ready to be shown what the patterns look like. In other words, one works from the aural understanding to the visual interpretation in learning to read

music. The present study was of insufficient length to develop much reading ability in the children. All of the groups were at that point in which they could have begun to recognize different rhythms, however, only one group actually learned to read. That group learned to read, differentiate, and play on rhythm instruments the following patterns.

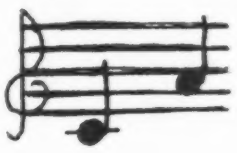
(1) (2) (3)



While this is not a particularly impressive amount of reading, it must be remembered that these children were not yet in school.

The Concept of Melody

One of the important things to consider in the development of children's melodic ability is their voice range. The tessatura of the song must be kept within their easy singing range in order for them to develop singing accuracy. As early as 1931 11/ music educators have known that a preschool child sings most easily between middle C and second space A.



Accordingly, the songs selected for presentation in this project were selected specifically with this range in mind.

The Feeling for the Tonal Center

The initial concept to be introduced was that of the tonal center or as it is sometimes called, the key note, or the "resting tone". In preschool songs, this is usually the last note of the song. The development of the feeling for key is facilitated if a chordal accompaniment is played along with the song. The instruments used for this purpose were the baritone ukulele and the autoharp. A portable instrument was specifically used so that the teacher could sit on the floor among the children or perhaps go outside in favorable weather for the music period.

Autoharp This was a useful ear training device for the development of the distinction between major and minor sounds. A bar would be depressed, the instrument strummed, and the children asked to identify whether they heard a major or minor sound. This is a somewhat advanced skill, some adults have difficulty identifying these sounds, and therefore one hundred percent success was not expected. Usually, about one-third to one-half of the disadvantaged children could identify correctly a minor or major chord played on the autoharp and about one-half to two-thirds of the advantaged children. To prevent the children from merely responding as they saw their neighbors do, they were asked to shut their eyes and were given a slip of colored paper. When they heard a minor chord, they were to raise their papers, when they heard a major chord they were not to raise their papers. In this way it was easy for the teacher to identify those who had developed the aural ability required.

Tuning sounds The singing of "tuning sounds" before each song was done as described in the previous section and also helped with the establishment of the major minor distinction.

The Feeling for Melodic Interval

Stated another way, this is the development of pitch accuracy, or singing accuracy. This was one of the primary objectives of the melodic portion of the program.

Echo songs By far the most effective way of developing this accuracy was through the use of echo songs. The easiest pattern for all the children to sing was the falling minor third, or in tonal syllables, so-mi. This pattern plus the universal playground chant, so-so-mi-la-so-mi, along with selected patterns that moved by skip or scalewise on the tonic chord were presented first. Echo singing was done with neutral syllables, with tonal syllables, using children's names, words of greeting, or other short phrases which seemed appropriate. Initially the teacher provided the model and the children the echo. Later, some of the more able children were allowed to be the leader and provide the model for the others to echo.

Echo singing was done individually between teacher and student in order to check the progress of each student. By playing frequent echo games, the teacher easily kept pace with each child's singing progress and, as with rhythm echo games, could easily identify those children needing assistance in this area. The patterns used in these echo games were always those which had been encountered in the songs being sung.

Hand signs. These were also used to foster the concept of accurate pitch. They varied from a simple movement in the direction of the pitch to a different handsign for each degree of the scale. Since it was not a purpose of the program to teach the tonal syllable system as such, usually a simple hand movement upward or downward was used. The children also used these movements which helped them match pitches.

One of the most successful uses of handsigns was for the teacher to sing a melodic pattern using up and down movements with her hand, then asking the children to link their fingers so that both hands moved up and down when they sang the echo. Doing echos in this manner was noticably more accurate than when the echos were sung without the use of hand signs.

Step bells. A set of diatonic song bells constructed in stairstep shape were also used to visually illustrate aural pitch movement. These were surprisingly successful. The teacher played a melodic pattern on the bells and the children sang it back using hand signs as above. Regular song bells were also used for echo singing and establishing pitch of songs. However, due to their flat construction, the visual aspect was not there and they were not as successful as the step type which could draw on both the visual and the aural senses.

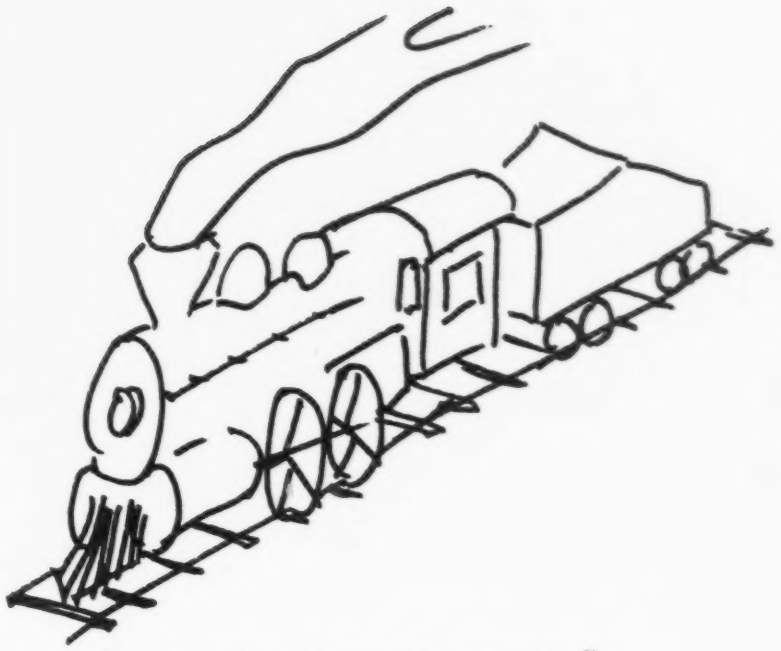
Resonator bells were employed toward the end of the project. These bells, each of which is mounted on its own tone block, were passed out, one to each child. Under the direction of the teacher, songs were played, each child striking his bell as the pitch occurred in the song. One group was even able to perform a song without direction, each child mentally singing the song and striking his bell when it occu red in the song.

Motivation Techniques

Most of the motivation was provided by the personalities of the teachers, their friendliness, the leading questions they asked about the song text subject, and similar procedures. Only one specific technique, as such, was employed.

The artist's sketch book. Each instructor was supplied with a large 18 x 20 sketch book in which they were to outline motivational picutres for use with the children. Reductions of some of these are illustrated in Figure 2 on the following page. Detailed accuracy was not required, simply an outline shape to stimulate the children's interest.

Song: "Funny Puppy"



Song: "The New River Train"

Song: "I'm a Little Teapot"

Song: "The Little White Duck"

Figure 2.

EXAMPLES OF SKETCH BOOK DRAWINGS
USED FOR MOTIVATION

In their final evaluation of the impact of the sketch books the instructors stated that they were highly successful but that some large pictures to supplement the drawings might have been beneficial.

The exclusion of a listening program. For better implementation, the program should have included a carefully selected listening program. This aspect was purposely omitted from the project for several reasons. One, record players were not available in all teaching centers. Second, it was desirable to conduct the program with a minimum of equipment in order to render the results applicable to the greatest number of schools. Third, if the program employed in the project produced significant results by itself, the later addition of recorded listening could only serve to make it better. On the other hand, if recorded songs had been employed in the initial project, the results, if significant, would have had to be partly attributed to the recordings and the total effect of the teaching method itself could not be accurately estimated.

Teaching to Individual Differences

A great deal of emphasis was placed upon teaching to the individual child. Many of the techniques and procedures outlined in the previous sections were used because they could be individualized between teacher and a single student in the midst of a group class situation. Early identification of problems possessed by individual students was stressed and immediate remedial action taken. In general, most of the problems of a musical nature centered around three basic types.

The non-singer

While there are various types of non-singers, only one type was encountered in this study. This was the child who habitually tries to sing in a speaking voice. His efforts at singing produce a voice quality the same as his speaking voice, in a very limited range (1 or 2 steps) and centered around the pitch "A" two ledger lines below the treble staff.

At the beginning of the project, most of the disadvantaged children and a few of the advantaged were of this type. The remedial action taken in each case was to have the child yell in an open vowel sound such as hi-ho, hey-o, or yoo-hoo. This generally raised his voice into an acceptable singing range. The next step was to prolong this

yell, then soften it a little to a singing voice quality. At this point the child usually realized that he was singing and had little or no difficulty finding his singing voice from then on. This procedure worked well with all the non-singers encountered in the study with one exception. A boy, in the advantaged group, sang once in a singing voice, the first time the procedure was used with him. Thereafter, he "could not" find his singing voice. Sometime later it was learned that some members of the boy's family had ridiculed him for trying to sing, indicating that it would not be possible for him to do it. This was apparently the root of his difficulty and was as much psychological as physical.

The Uncertain Singer

Most of the disadvantaged and many of the advantaged children passed through this stage of development. Several types were found. The most severe was the type who sang in a singing voice quality but had an inaccurate conception of the melodic direction and interval distance. Another type was one who sang the correct melodic direction but was inaccurate as to the correct interval, resulting in his singing "out of tune". The least severe type was the child who sang most of the intervals correctly but missed the more difficult ones. This type usually ended the song on a lower tonality than that on which he began.

The procedures outlined in the teaching of tonal concepts (use of bells, echo games, etc.) were found to be sufficient to correct these difficulties. Sometimes a child would pass through all these types from the non-singer through the various uncertain singer types before he would become an accurate singer. Others would skip over some of the stages. It was usually simply necessary to identify those having difficulties and give them frequent individual attention. Seating these children next to ones who sang accurately was also found to be helpful.

The Reluctant Singer

Only a few children of this type were encountered. Typically, they could sing either accurately or with some uncertainty. Their primary problem was one of shyness resulting in their refusal to sing at all, or to do so in a very small weak manner. In order to treat this difficulty it was first necessary to determine the cause. It was early discovered that a significant factor was the clothing the teachers wore to the schools. This seemed to have a considerable effect on the response of some of the children; the more casual the clothing, the better the response.

It was also discovered that some of the children were mentally immature causing them to react as a three year old might be expected to behave. (a three year old very often does not participate in group music activities-but will nevertheless learn from the others) In these cases, simple kindness and patience was the best treatment, and worked with most of the children in reducing their backwardness.

A few children in the disadvantaged group were found to have severe emotional problems probably resulting from their home environment. Nothing the teachers tried with these children helped to alter their refusal to participate. In one instance, where there was a change in the home situation (the child was adopted by a different family) the problem vanished and the child began to participate.

The hyperactive Singer

This manifestation was not related to music directly but resulted in poor learning situations due to the child's lack of concentration. Various techniques were tried with these children in order to help them maintain their attention. The better methods were maintaining "eye-contact" with them, asking frequent questions of them, calling them by their first name, asking them to perform individually by playing echo games, or to play rhythm instruments, and seating them next to the teacher. Negative attention (scolding or denying some small privilege) was the least effective method of getting these children to concentrate and those teachers who tried this often found that it had the opposite effect from that intended; the child became even less attentive.

This tendency toward hyperactivity could also usually be traced to the home environmental situation. Nor was it a constant characteristic. On any given day a specific child might appear at school emotionally disturbed over some prior happening at home. On these days, he would learn little, could hardly contain himself, and paid little attention. On other days he would apparently learn quite well. Many of the disadvantaged children exhibited this tendency which made it somewhat difficult to progress as a class. It was found that much individual attention was necessary for those children emotionally ready to learn on any given day. It was also necessary to repeat material many times in order to teach those children who were not able to learn during previous presentations. While this manner of teaching was somewhat frustrating from the instructor's standpoint, the children did progress over the entire training period.

Footnotes for Chapter Three

[9]William T. Young. "An Investigation of the Relative and Combined Power of Musical Aptitude, General Intelligence, and Academic Achievement Tests to Predict Musical Attainment" (Unpublished doctoral dissertation, University of Iowa, 1969) Library of Congress Number 69-13,191.

[10]Edwin Gordon. How Children Learn when they Learn Music Iowa City, Iowa: Eble Music Company, distributors. 1967.

CHAPTER IV

STATISTICAL DATA: AN OBJECTIVE EVALUATION

In making inferences about a population based on statistical data, there are two possible results. One is that the conclusions suggested by the data are true of the population as a whole. The other is that the conclusions suggested by the data are incorrect and were therefore the result of some chance fluctuations in the sample which rendered their behavior untypical of the population. In order to avoid the latter result, the level of significance chosen for the statistical tests used in this study was .01. This means that the probability of the obtained results being due to some chance factor is only one in one hundred. While this is a somewhat more exacting level of significance than that demanded in many investigations, it was reasoned that importance of reaching a correct conclusion justified its use.

Test Reliability

The Hill Primary Music Ability Test was administered to a total of 279 students during the course of this investigation. The reliability of these administrations was estimated by the split-halves technique corrected by the Spearman-Brown formula. This is probably the best estimate of reliability for a test of this type. The obtained coefficient of reliability for the entire battery was .92. A coefficient of this magnitude may be regarded as evidence that the test was reliably measuring the attributes in question. This coefficient also compares favorably with the reliabilities reported by the test author in four previous administrations of the test. The coefficients reported in those administrations were .77, .78, .93, and .95. 11/

The reliability coefficients found for the six individual subtests ranged from .63 to .95. Only two of these subtests produced low reliability coefficients. They were the Song Phrase Repitition Test (.79) and the Tap Recognition Test (.63). The former consisted of segments of three familiar childrens songs. The purpose of the test was to determine the children's ability to sing a known song on pitch. In actual fact, many of the children did not know, or did not recognize, the songs and were thus faced with the problem of recalling from eleven to fourteen pitches

which held little or no relationship to anything they had heard before. This, of course, was a considerable task for children of this age and probably accounts for the lower reliability.

The same circumstances were encountered with the Tap Recognition Test. This test also incorporated familiar songs, the rhythms of which were presented by the examiner and the children asked to repeat them. Here again, the songs were apparently not familiar to many of the children. The responses they gave were simply attempts at remembering and repeating a rather lengthy series of rhythms for which they had no prior connections. As in the previous instance, this probably accounts for the low reliability figure.

The coefficients of reliability for the remaining four subtests and the composite test were highly satisfactory. The reliabilities obtained for all portions of the test are displayed in Table 2.

Results of the Pretest Administration

The pretest group means and standard deviations for all four preschools are shown in Table 3. The results of a test of this nature, when administered to children of preschool age, can be assumed to reflect, to a substantial degree, the influence of their early childhood environment, particularly that of their home. If this assumption is valid, the results of this test indicate that the children in the disadvantaged-experimental group had experienced the weakest musical environment of the four groups participating in the project. The mean score of the disadvantaged-control group, although greater than that of the disadvantaged-experimental group, was considerably lower than either of the two advantaged groups. The children in the two advantaged groups, on the other hand, had experienced a better musical environment, particularly those in the advantaged-control group. The latter group was definitely superior in all aspects of the test. As shown in the table, there seemed to be less difference in the rhythmic abilities of the four groups than in their melodic abilities.

There was much variability in all groups, as evidenced by the large standard deviations. Additional support for this observation was found in that, in almost all tests, the scoring range extended from zero to near the maximum possible score. Variability of this magnitude is often encountered when testing children of preschool age and was, therefore, not entirely unexpected.

These data illustrate the vast difference in the amount of musical

Table 2.

RELIABILITY COEFFICIENTS
FOR ALL ADMINISTRATIONS OF THE
HILL PRIMARY MUSIC SKILLS TEST

N =279

Test	Reliability *	
Interval Matching	.89	
Unfamiliar Phrase Repitition	.95	
Tone Matching	.91	
Familiar Song Repitition	.79	
Total Melodic Portion		.90
Tap Recognition	.63	
Tap Repitition	.88	
Total Rhythmic Portion		.81
Hill Primary Music Skills Total Test		.92

* Split-halves reliability, Spearman-Brown corrected.

Table 3.

PRETEST MEANS AND STANDARD DEVIATIONS
FOR ALL FOUR PRESCHOOL GROUPS

	Group 1		Group 2		Group 3		Group 4	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Interval Matching	7.4	6.76	10.5	6.86	7.9	6.96	14.1	6.52
Unfamiliar Phrase Repitition	15.0	23.15	29.5	27.41	27.6	29.51	49.7	27.62
Tone Matching	7.8	7.97	14.9	10.06	8.9	9.32	17.2	10.13
Familiar Song Repitition	3.1	3.58	5.8	5.06	5.2	5.25	9.0	4.76
Total Melodic Achievement	33.3	37.57	60.7	45.38	49.6	48.95	90.0	44.61
Tap Recognition	2.5	3.62	3.5	3.26	4.4	4.47	4.6	3.83
Tap Repitition	11.7	7.94	13.3	7.93	12.5	8.37	16.6	7.18
Total Rhythmic Achievement	14.2	10.37	16.8	10.30	16.9	11.52	21.2	10.29
Composite Music Ability Test	47.5	44.85	77.5	53.91	66.5	56.67	111.2	50.98

Group 1: Disadvantaged-experimental
Group 2: Advantaged-experimental
Group 3: Disadvantaged-control
Group 4: Advantaged-control

ability children from advantaged and disadvantaged environments acquire in their early formative years. If allowed to go unchanged, these children will enter elementary school at widely divergent musical ability levels. While some of the advantaged children are also poorly prepared, the majority of them are better prepared than their disadvantaged counterparts and will probably be the ones who achieve in music. In contrast, the disadvantaged children, most of whom originate in homes with poor musical backgrounds, are ill-prepared to achieve in music at the time they enter elementary school.

Results of the Posttest Administration

The group means and standard deviations for the posttest administration of the Primary Music Ability Test are displayed in Table 4. As the data in this table indicate, the advantaged-experimental group exceeded the other three groups in all sections of the test. The advantaged-control group, which had originally scored the highest (on the pretest) ranked second in the melodic portion and in the composite test. In the rhythmic portion, this group ranked third, under the disadvantaged-experimental group. The latter ranked third in the melodic portion, second in the rhythmic portion, and third in the total composite test. While these rankings are interesting, it should be emphasized that in actual magnitude, the composite scores of these three ranking groups (disadvantaged-experimental; advantaged-experimental; and advantaged-control) did not differ substantially. Thus, the final level of attainment for these three groups, as indicated by this test, was generally the same.

In order to justify this conclusion regarding the similarity of the posttest composite scores, t tests for significance of difference between the group means were calculated. The results are shown in Table 5. As can be seen, at the 99% level of confidence, there was apparently no real difference between the scores of the three groups in question.

In marked contrast to this was the mean posttest score of the disadvantaged-control group, where teaching was not done. These children had apparently changed very little during the period of time encompassed by this project. Their level of attainment was significantly lower than the other three groups, especially in the melodic portions of the test.

The score dispersions for all four groups were generally similar and as with the pretest, exhibited much variability.

Table 4.

POSTTEST MEANS AND STANDARD DEVIATIONS
FOR ALL FOUR PRESCHOOL GROUPS

	Group 1		Group 2		Group 3		Group 4	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Interval Matching	13.81	6.19	14.25	6.60	6.88	6.66	14.22	6.31
Unfamiliar Phrase Repitition	44.53	29.42	52.21	31.45	24.50	29.92	49.38	29.29
Tone Matching	17.06	9.69	17.53	9.76	8.47	9.89	17.28	9.63
Familiar Song Repitition	6.81	4.56	8.53	5.09	4.22	4.36	7.88	5.22
Total Melodic Achievement	82.21	48.43	92.52	48.65	44.07	48.68	88.76	47.11
Tap Recognition	7.53	4.56	7.19	4.03	5.59	4.85	5.59	4.08
Tap Repitition	20.16	7.09	20.91	6.37	15.13	8.28	18.84	7.96
Total Rhythmic Achievement	27.69	10.83	28.10	9.77	20.72	12.25	24.43	10.43
Composite Music Ability Test	109.91	58.10	120.62	55.46	64.79	56.30	113.19	54.24

Group 1: Disadvantaged-experimental
Group 2: Advantaged-experimental
Group 3: Disadvantaged-control
Group 4. Advantaged-control

Table 5.

RESULTS OF t TESTS FOR SIGNIFICANCE OF DIFFERENCE BETWEEN THE POSTTEST MEAN SCORES OF ALL FOUR PRESCHOOL GROUPS

	Disadvantaged Experimental (Mean = 109.91)	Advantaged Experimental (Mean = 120.62)	Disadvantaged Control (Mean = 64.79)
Advantaged Experimental (Mean = 120.62)	1.3334		
Disadvantaged Control (Mean = 64.79)	5.5770 *	7.0645 *	
Advantaged Control (Mean = 113.19)	.4127	.9578	6.1911 *

* At the .01 level, a t of 2.39 is considered significant.

Gain Score Analysis

The mean gain scores and standard deviations for the four preschool groups are included as Table 6. By far the greatest gains in all parts of the test were achieved by the disadvantaged-experimental group. Of slightly less magnitude, but nevertheless substantial, were the gains exhibited by the advantaged-experimental group. These two groups were given identical instruction by the same teachers under similar conditions. The reason for the differences in the amount of gains are, therefore, probably attributable to the fact that the disadvantaged-experimental group was initially quite low, and under these circumstances, could be expected to improve rapidly at first, which is actually what occurred, thus accounting for the large total gain.

In contrast to the large gains achieved by the experimental groups, was the almost complete lack of improvement which was apparent in both of the control groups. The advantaged-control group, which might have been expected to make some gain because of their superior environmental surroundings, made only small gains in rhythmic ability and regressed slightly in melodic skills. This group in addition to their favorable environment, participated at least twice weekly in a singing session at their preschool. Apparently this "song approach" is not particularly effective for teaching specific musical concepts of the nature of those included in the Primary Music Skills Test.

The disadvantaged-control group regressed in all aspects of the melodic portion of the test and to a somewhat greater extent than did the advantaged-control group. They improved in rhythm skills, however, to almost the same degree as their advantaged counterparts but the improvement was not sufficient to offset the loss of melodic ability. On the total test, this group regressed slightly.

Control Group Improvement

In order to determine whether the regression in melodic ability and the progress in rhythmic ability by the two control groups was significant beyond that to be expected by fluctuations in the test sample, t tests for differences between pre and posttest mean scores were calculated. The results of these tests are shown in Table 7. For comparison, similar t tests for the experimental groups were calculated and are also shown in the table.

Table 6.

GAIN SCORE MEANS AND STANDARD DEVIATIONS
FOR ALL FOUR PRESCHOOL GROUPS

	Group 1		Group 2		Group 3		Group 4	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Interval Matching	6.38	5.60	3.72	6.49	-1.00	2.78	.09	3.70
Unfamiliar Phrase Repitition	29.53	25.08	22.69	17.08	-3.13	10.35	-.31	14.89
Tone Matching	9.25	8.27	2.63	7.33	-.47	6.21	.13	7.57
Familiar Song Repitition	3.69	3.57	2.72	3.45	-.97	3.42	-1.16	3.57
Total Melodic Achievement	48.85	23.00	31.76	25.00	-5.57	17.46	-1.25	19.62
Tap Recognition	5.03	3.30	3.69	2.79	1.22	3.82	1.03	3.86
Tap Repitition	8.50	5.83	7.59	5.03	2.59	6.68	2.25	4.89
Total Rhythmic Achievement	13.53	7.59	11.28	9.48	3.81	8.23	3.28	6.94
Composite Gain, Music Ability	62.38	40.92	43.04	25.99	-1.76	14.86	2.03	21.70

Group 1: Disadvantaged-experimental
Group 2: Advantaged-experimental
Group 3: Disadvantaged-control
Group 4: Advantaged-control

Table 7.

RESULTS OF t TESTS FOR SIGNIFICANCE
OF DIFFERENCE
BETWEEN PRETEST AND POSTTEST SCORES

	Disadvantaged Experimental Group	Advantaged Experimental Group	Disadvantaged Control Group	Advantaged Control Group
Interval Matching	6.9912*	3.9320*	1.0468	.1323
Unfamiliar Phrase Rep.	7.8869*	5.4437*	.7376	.0794
Tone Matching	7.3804*	1.8763	.3164	.0572
Familiar Song Rep.	6.3994*	3.8037*	1.4360	1.5854
Total Melodic Ach.	7.9795*	4.7828*	.9010	.1911
Tap Recognition	8.6393*	7.1187*	1.8042	1.7691
Tap Repitition	7.9475*	7.4816*	2.2338	2.0895
Total Rhythm Achievement	8.9968*	7.9597*	2.2424	2.2045
Composite Test	8.5031*	5.5751*	.2141	.3145

* a t of 2.46 is significant at the .01 level.

As the table shows, the posttest scores of the disadvantaged-experimental group were all significantly higher than their pretest scores. Similarly, the advantaged-experimental group made significantly better posttest scores in all parts of the test except in one instance (tone matching). By way of contrast, none of the posttest scores of either of the two control groups were significantly different from their pretest scores over that which could have occurred by pure chance. Thus, despite the fact that the control groups made slight improvements in rhythmic ability and slight losses in melodic ability, these should not be regarded as real changes.

Analysis of Variance

The use of an analysis of variance, within a factorial design, as was done in this study, has two advantages over some other possible procedures. 12/ It increases the precision of the experiment and provides opportunity to study the interaction (if any) between treatments and levels. In this way, the relative effectiveness of the treatments at each level may be determined simultaneously in one experiment. In the specific instance of this study, the relative effectiveness of the experimental teaching method and the unstructured programs of the control schools (treatments) with subjects from two differing environmental backgrounds (levels) was investigated.

Interpretation of the tables. The data obtained from the analyses of variance are reported in Tables 8 through 16 inclusive. One table is presented for each of the six subtests, the melodic and rhythmic portions of the test, and the composite; nine in all. In each table, the upper portion is devoted to the presentation of the t test results for the significance of difference between each group mean gain and that of each of the other groups. These t tests provide information relative to the simple effects enumerated below:

(1) The effect of the experimental teaching method with children from disadvantaged environments. (Group DX compared with Group DC)

(2) The effect of the experimental teaching method with children from advantaged environments. (Group AX compared with Group AC)

(3) The effect of environmental background on the results obtained with the experimental teaching method. (Group DX compared with Group AX)

Table 8.

INTERVAL MATCHING GAIN SCORES: t and F tests of significance.

t tests for significance of difference between group means:

	Disadvantaged Experimental (Mean 6.38)	Advantaged Experimental (Mean 3.72)	Disadvantaged Control (Mean -1.00)
Advantaged Experimental (Mean 3.72)	1.8199		
Disadvantaged Control (Mean -1.00)	6.6740*	3.6357*	
Advantaged Control (Mean .09)	5.2943*	2.7930*	1.3362

* At the .01 level, a t of +2.39 is significant.

Summary table of analysis of variance:

	ss	df	ms	F
Between A	19.5287	1	19.5287	.84
Between B	967.9982	1	967.9982	41.64 **
A x B interaction	112.5028	1	112.5028	4.84
Within groups	2882.6890	124	23.2475	
Total	3982.7187	127		

Factors:

A = Environment
B = Teaching Method

** At the .01 level, an F of +6.84 is significant.

Table 9.

UNFAMILIAR PHRASE REPITITION GAIN SCORES: t and F tests of significance.

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t tests for significance of difference between score means:

	Disadvantaged Experimental (Mean = 29.53)	Advantaged Experimental (Mean = 22.29)	Disadvantaged Control (Mean = -3.13)
Advantaged Experimental (Mean = 22.29)	1.2830		
Disadvantaged Control (Mean = -3.13)	6.7427*	7.2574*	
Advantaged Control (Mean = -.31)	5.7887*	5.7991*	.8584

* At the .01 level, a t of +2.39 is significant.

Summary table of analysis of variance.

	ss	df	ms	F
Between A	130.0106	1	130.0106	.41
Between B	24481.8856	1	24481.8856	77.46 **
A x B interaction	725.9438	1	725.9438	2.29
Within groups	39192.2800	124	316.0668	
Total	64530.1200	127		

Factors:
A = Environment
B = Teaching Method

** At the .01 level, an F of +6.84 is significant.

Table 10.

TONE MATCHING GAIN SCORES: t and F tests of significance.

t tests for significance of difference between score means.

	Disadvantaged Experimental (Mean = 9.25)	Advantaged Experimental (Mean = 2.63)	Disadvantaged Control (Mean = -.47)
Advantaged Experimental (Mean = 9.25)	3.3556*		
Disadvantaged Control (Mean = -.47)	5.2207*	1.8058	
Advantaged Control (Mean = .13)	4.6817*	1.3404	.3399

* At the .01 level, a t of +2.39 is significant.

Summary table of analysis of variance.

	ss	df	ms	F
Between A	258.0078	1	258.0078	4.64
Between B	1194.3822	1	1194.3822	21.50**
A x B interaction	449.8835	1	449.8835	8.10**
Within groups	6888.9687	124	55.5562	
Total	8791.2422	127		

Factors:

A = Environment

B = Teaching Method

** At the .01 level, an F of +6.84 is significant.

Table 11.

FAMILIAR SONG REPITITION: t and F tests of significance.

---

t tests for significance of difference between group means:

	Disadvantaged Experimental (Mean = 3.69)	Advantaged Experimental (Mean = 2.72)	Disadvantaged Control (Mean = -.97)
Advantaged Experimental (Mean = 2.72)	1.1360		
Disadvantaged Control (Mean = -.97)	5.4358 *	4.2598 *	
Advantaged Control (Mean = -1.16)	5.5559 *	4.4023 *	.2121

* At the .01 level, a t of +2.39 is significant.

Summary table of analysis of variance:

	ss	df	ms	F
Between A	10.6953	1	10.6953	.88
Between B	582.2578	1	582.2578	48.25 **
A x B interaction	4.8825	1	4.8825	.40
Within groups	1496.5316	124	12.0688	
Total	2094.3672	127		

Factors:

A = Environment
B = Teaching Method

** At the .01 level an F of +6.84 is significant.

Table 12.

TOTAL MELODIC ACHIEVEMENT: t and F tests of significance.

t tests for significance of difference between group means:

	Disadvantaged Experimental (Mean = 48.85)	Advantaged Experimental (Mean = 31.76)	Disadvantaged Control (Mean = -5.57)
Advantaged Experimental (Mean = 31.76)	5.0308*		
Disadvantaged Control (Mean = -5.57)	18.8458*	12.2420*	
Advantaged Control (Mean = -1.25)	16.5721*	10.3872*	1.6448

* At the .01 level, a t of +2.39 is significant.

Summary table of analysis of variance:

	ss	df	ms	F
Between A	2628.25	1	2628.25	3.78
Between B	60900.62	1	60900.62	87.64 **
A x B interaction	3444.38	1	3444.38	4.96
Within groups	86171.75	124	694.93	
Total	153145.00	127		

Factors:

A = Environment
B = Teaching Method

** At the .01 level, an F of +6.84 is significant.

Table 13.

TAP RECOGNITION: t and F tests of significance.

t tests for significance of difference between group means:

	Disadvantaged Experimental (Mean = 5.03)	Advantaged Experimental (Mean = 3.69)	Disadvantaged Control (Mean = 1.22)
Advantaged Experimental (Mean = 3.69)	1.7111		
Disadvantaged Control (Mean = 1.22)	4.5986*	3.5372*	
Advantaged Control	4.7355*	3.7225*	.2025

* At the .01 level, a t of +2.39 is significant.

Summary table of analysis of variance:

	ss	df	ms	F
Between A	18.7278	1	18.7278	1.52
Between B	334.7574	1	334.7574	27.12**
A x B interaction	11.6935	1	11.6935	.87
Within Groups	1530.3135	124	12.3412	
Total	1895.4922	127		

Factors:

A = Environment
B = Teaching Method

** At the .01 level an F of +6.84 is significant.

Table 14.

TAP REPITITION: t and F tests of significance.

t tests for significance of difference between group means:

	Disadvantaged Experimental (Mean = 8.50)	Advantaged Experimental (Mean = 7.59)	Disadvantaged Control (Mean = 2.59)
Advantaged Experimental (Mean = 7.59)	.6606		
Disadvantaged Control (Mean = 2.59)	3.6826*	3.3205*	
Advantaged Control (Mean = 3.28)	4.4280*	4.1141*	.2233

* At the .01 level, a t of +2.39 is significant.

Summary table of analysis of variance:

	ss	df	ms	F
Between A	12.4999	1	12.4999	.37
Between B	1012.4999	1	1012.4999	29.71**
A x B interaction	2.5315	1	2.5315	.07
Within groups	4225.4375	124	34.0761	
Total	5252.9688	127		

Factors:
A - Environment
B = Teaching Method

** At the .01 level, an F of +6.84 is significant.

Table 15.

TOTAL RHYTHMIC ACHIEVEMENT: t and F tests of significance.

---

t tests for significance of difference between group means:

	Disadvantaged Experimental (Mean = 13.53)	Advantaged Experimental (Mean = 11.28)	Disadvantaged Control (Mean = 3.81)
Advantaged Experimental (Mean = 11.28)	1.8520		
Disadvantaged Experimental (Mean = 3.81)	8.6820*	5.9503*	
Advantaged Control (Mean = 3.28)	9.9664*	6.8092*	.0492

* At the .01 level, a t of +2.39 is significant.

Summary table of analysis of variance:

	ss	df	ms	F
Between A	130.01	1	130.01	2.88
Between B	2619.07	1	2619.07	58.10 **
A x B interaction	106.95	1	106.95	2.37
Within groups	5590.17	124	45.08	
Total	8446.20	127		

Factors:
A = Environment
B = Teaching Method

** At the .01 level, an F of +6.84 is significant.

Table 16.

COMPOSITE GAIN SCORES: t and F tests of significance.

t tests for significance of difference between group means:

	Disadvantaged Experimental (Mean = 62.38)	Advantaged Experimental (Mean = 43.04)	Disadvantaged Control (Mean = -1.76)
Advantaged Experimental (Mean = 43.03)	2.1624		
Disadvantaged Control (Mean = -1.75)	7.8244*	8.0075*	
Advantaged Control (Mean = 2.03)	6.9958*	6.8012*	.4781

* At the .01 level, a t of +2.39 is significant.

Summary table of analysis of variance:

	ss	df	ms	F
Between A	2423.917	1	2423.917	2.94
Between B	85232.617	1	85232.617	103.39 **
A x B interaction	3795.653	1	3795.653	4.61
Within groups	102216.530	124	824.327	
Total	193668.617	127		

Factors:
A = Environment
B = Teaching Method

** At the .01 level, an F of +6.84 is significant.

(4) The effect of environment on the musical growth of children exposed to an unstructured music program/ (Group DC compared to Group AC)

(5) The effect of the experimental teaching method on children from disadvantaged environments compared to the growth of advantaged children in an unstructured program. (Group DX compared to Group AC)

(6) The effect of the experimental teaching program with children from advantaged environments compared to the musical growth of disadvantaged children in an unstructured program. (Group AX compared with Group DC)

The lower por tion of the tables contain the summary for the analysis of variance. From this part of the table, the main effects of environment (factor A), the main effects of teaching method (factor B), and the presence of interaction (A x B) may be read. The main effects comprise the "average" effect of one factor for both levels of the opposite factor. For example, the average effect of teaching method on children from both environments combined. Lastly, the interaction effect, if non-significant may be interpreted thusly: the effect of a specific environment is the same for either type of teaching, or, the effect of a specific kind of teaching is the same for children from either environment. Additional explanation of the interpretation and importance of interaction may be found in Lindquist 13/ or McGuigan 14/.

The effect of the experimental teaching method with disadvantaged children. This effect was determined by comparison of the scores for the disadvantaged-experimental group with those for the disadvantaged-control group. In terms of total gain (composite test) the former group, with a mean of 62.38 proved to be significantly superior to the latter, with a mean of -1.75, considerably beyond the .001 level of probability.

In the area of rhythmic achievement, the gains exhibited by the disadvantaged-experimental group were significantly better than those of the disadvantaged-control group on all three tests. The possibility of the difference in total rhythmic gain occurring by chance were less than one in one thousand. Probabilities of this magnitude lend credence to the assumption that the experimental teaching method was effective for raising the rhythmic ability level of disadvantaged children.

The disadvantaged-experimental group also made significantly better gains than those of the disadvantaged-control group in total melodic achievement as well as in interval matching, unfamiliar phrase

repitition, tone matching, and familiar song repitition.

Since all nine criterion scores indicated improvement by the disadvantaged-experimental group, which was significantly superior to that of the disadvantaged-control group, the conclusion may be drawn that the experimental method of teaching was effective with children from disadvantaged environments.

The effect of the experimental teaching method with children from advantaged environments. The total gain (composite test) of the advantaged-experimental group was significantly superior to that achieved by the advantaged-control group. By the same token, the gains demonstrated by the advantaged-experimental children in total rhythmic achievement, tap recognition, and tap repitition were also statistically significant. In the areas of melodic achievement, the experimental group achieved significantly better gains in interval matching, unfamiliar phrase repitition, familiar song repitition, and total melodic achievement than those of the control group.

In the tone matching test, however, the gains demonstrated by the advantaged-experimental group (mean = 2.63) did not prove to be significantly better, at the .01 level, than the smaller gain achieved by the control children. Despite this one insignificant t, these statistics in general suggest that the experimental method was effective for teaching advantaged children.

The effect of environment on results obtained by the experimental teaching method. In order to determine what effect, if any, environment had on the amount of gain shown by the disadvantaged children, compared with that of the advantaged children, when both were taught by the experimental teaching method, t tests were calculated between scores for the disadvantaged-experimental and the advantaged-experimental groups. As displayed in the tables, no significant differences at the 99% level of probability was observed in total gain, total rhythmic achievement, tap recognition, tap repitition, interval matching, unfamiliar phrase repitition, and familiar song repitition. Significant differences, in favor of the disadvantaged children, were observed between gain scores for the groups in tone matching and in total melodic achievement. As discussed in a previous section dealing with gain score analysis, the disadvantaged-experimental group made substantially larger gains in tone matching. This improvement, plus slightly superior gains in the remaining melodic tests, served to produce a total melodic achievement for the disadvantaged group that was significantly better than that of the advantaged group.

The effect of environment on the musical growth of children exposed to an unstructured method of teaching. The results of the t tests for significance of difference between the scores of the disadvantaged-control and the advantaged-control children proved to be non-significant in all instances. Neither school apparently had an effective music program, as evidenced by the lack of total gain. The rhythmic gain of the disadvantaged group was slightly better than that of the advantaged children, but their losses in melodic ability were greater than the latter. As shown by the t tests, none of these differences were significant beyond the probability that they could have occurred by mere chance.

The effect of the experimental teaching method on disadvantaged children compared to the growth of advantaged children in an unstructured music program. The results of the t tests for significance of difference between the mean gain scores of the disadvantaged-experimental group and those of the advantaged-control group showed a significant t in favor of the disadvantaged group in all cases. Apparently, the experimental method was more effective for inducing musical improvement in preschool children.

The effect of the experimental teaching method with advantaged children compared to the growth of disadvantaged children in an unstructured program. This effect was determined by calculating t tests for significance of difference between mean gain scores of the advantaged-experimental group and the disadvantaged-control group. The gains demonstrated by the former proved to be significantly superior to those of the disadvantaged children in all tests but tone matching. The advantaged children were quite proficient on tone matching on the pretest and made comparatively small improvement. The disadvantaged group, on the other hand, pretested rather low and made no improvement. While the pretest and posttest score magnitudes were different for the two groups, the gain displayed by each were not significantly different and therefore must be regarded as possibly due to chance factors.

The main effect of environment. The main effect of environment is designated as "Factor A" in the summary tables for analysis of variance. In no case was a significant F-ratio encountered for this factor. The logical inference is thus that environmental background is not a significant factor in determining the amount of gain (learning) that can be induced.

The main effect of the experimental teaching method. This effect is designated "Factor B" in the summary tables. In all instances, the F-ratios were highly significant, ranging from 21.50 to 103.39. An F of

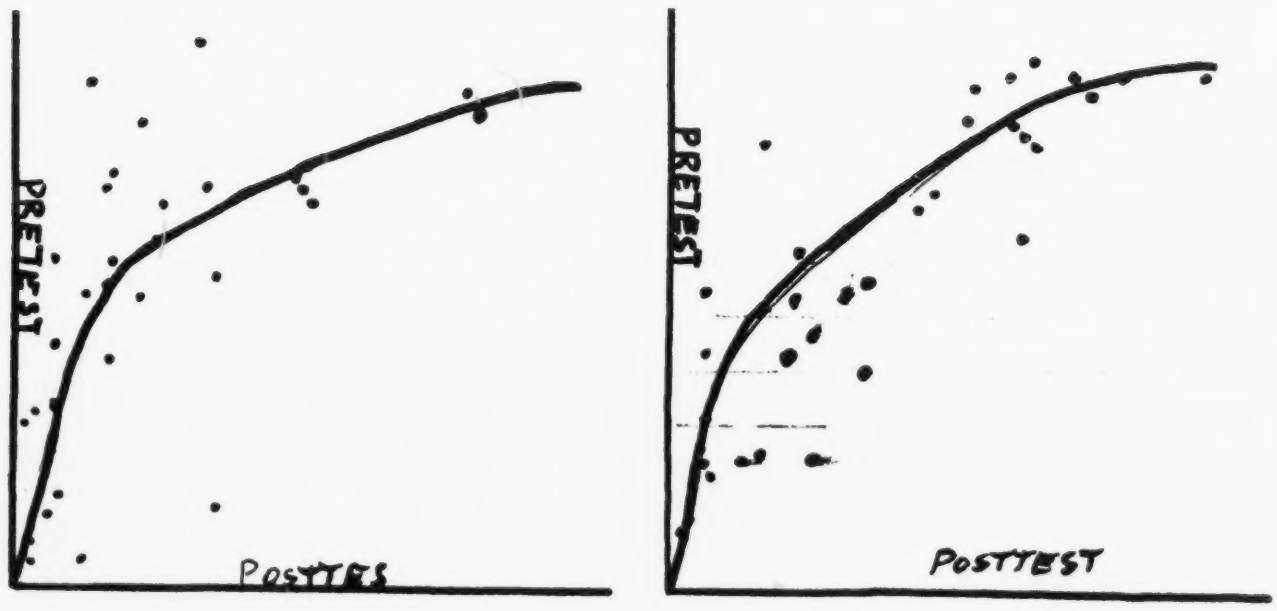
6.84, or greater, was significant at the 99% level of probability. F-ratios of the size found in this study leave little doubt of the effectiveness of the experimental teaching procedures for producing improvement in preschool children of the type who participated in this study.

The interaction effect. There was no significant interaction in eight of the nine tests. The exception was the tone matching test which showed significant interaction. This was caused by the extremely large gains of the disadvantaged experimental group, which in the case of the tests for simple effects, proved to be significantly superior to all three of the other groups while the gains of the three were not significantly different from each other. This interaction should not be interpreted as indicative of the lack of effectiveness of the teaching method.

Growth Profiles

Of particular interest were the musical growth profiles of the two experimental groups of children. It will be seen in Figure 3, that when an average line of growth is plotted according to the scatter grams, the resulting growth lines are surprisingly similar. It is, of course, obvious that more of the advantaged children are at the upper end of the scale and more of the disadvantaged at the lower, but the fact that the patterns of growth appear to be the same indicates that possibly in the case of music, the children develop in the same manner regardless of their environmental origin. The primary difference seems to be that the disadvantaged child has further to progress in order to make up for his disadvantagement. The gratifying prospect is that being disadvantaged does not apparently alter his chances for success. He simply must receive more intensive training than his counterpart but is apparently able to attain the same level of accomplishment in tiee.

Figure 4 graphically illustrates the progress of the four groups. It can be observed that little or no change occurred in the total musical ability of the two control groups where an unstructured musical program was offered. t tests, previously discussed indicated that the differences in pre and posttest scores of these two groups were not significantly different for each group, nor were the gains of the two groups significantly different from each other. However, it can be observed from the graph that a tendency is apparent for the disparity between the abilities of the two groups to become greater even in the short time encompassed by this study. The children in these two groups will enter elementary school at markedly different ability levels. If, there, they are grouped by

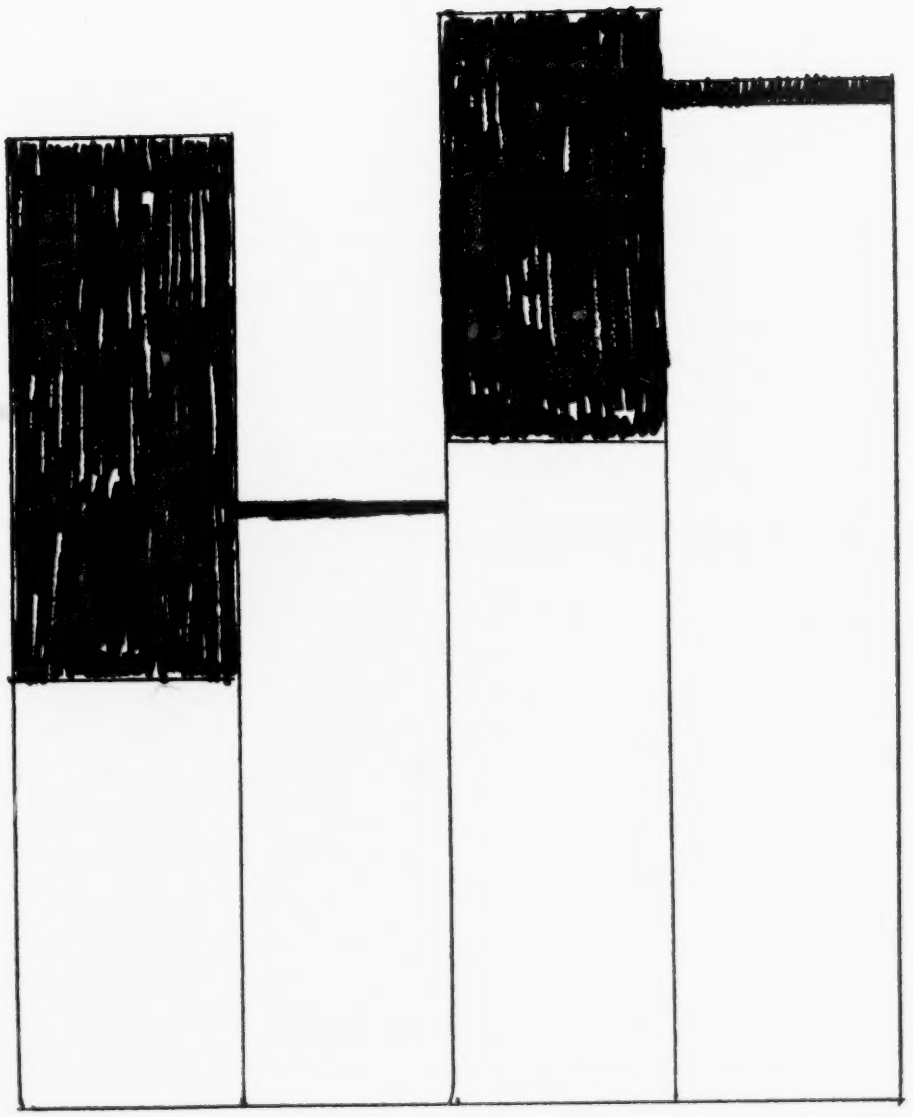


Disadvantaged

Advantaged

Figure 3.

GROWTH PROFILES
OF THE TWO EXPERIMENTAL PRESCHOOL GROUPS



	Dis-Exp.	Dis-Cont.	Adv-Exp.	Adv-Cont.
Initial	47.5	66.5	77.6	111.2
Gain	62.4	-1.8	43.0	2.03
Final	109.9	64.8	120.6	113.3

Figure 4

PRETEST, POSTTEST, AND GAIN SCORES
FOR ALL FOUR PRESCHOOL GROUPS

ability, the result will be a de-facto segregation along socio-economic lines. If on the other hand, they are combined in a single class, the children from the disadvantaged environment will almost assuredly be the underachievers. The one hope for the disadvantaged children is a remedial program of instruction similar to the one initiated in this study.

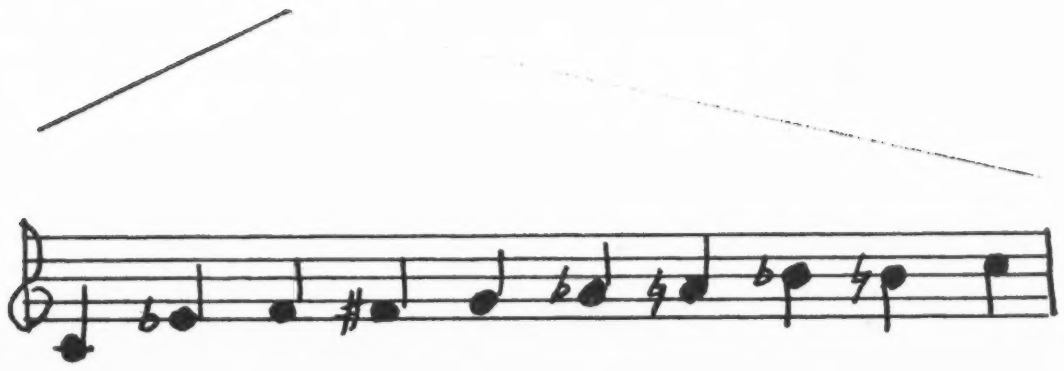
By way of contrast, the effects of a structured program are readily apparent. As shown, the disadvantaged-experimental group, which was initially the lowest ability group, made the most noticable gains and although they finished third in the ranking of the four groups, were not, as a group, significantly different from the two advantaged groups in ability level. These disadvantaged children, in contrast to those in the control group, will enter elementary school on a level at which they will be able to perform in a manner comensurate with other children. Their chances of successful school participation in music are infinitely greater than those of the disadvantaged group who did not receive remedial training.

The Voice Range of Preschool Children.

While it was not one of the primary purposes of this study to investigate the vocal singing ranges of children, some information relative to this topic was obtained from the results of the tone matching test. A total of 284 tests were administered during the investigation. These tests were then examined and the number of children who were able to sing each pitch presented in the test, were tabulated. The results of these tabulations are shown in Figure 5. The greatest number of children were able to accurately reproduce the pitch F (first space of the treble staff). A substantial number were also able to accurately reproduce E-flat, F-sharp, and G-natural. Less than forty per cent of the children could accurately sing the remaining pitches included in the test. Third space C, the highest pitch resented was sung by only 59 of the children (21%).

These figures seem to indicate that the range of most preschool children's voices is quite limited and is centered on F. The test did not, of course, throughly measure the lower part of the singing range. It may well be that the children could have sung several lower pitches with ease had they been included in the test. However, the results do suggest possible limits within which most preschool songs should be pitched.

Of interest also is a comparison of these results with the results of a similar investigation conducted in 1931. 15/ In that study, forty-eight children ranging in age from 31 to 48 months were studied.



Pitch	C	E^{b}	F	F#	G	A^{b}	A	B^{b}	B	C
Number of correct responses	99	123	130	129	120	113	87	85	85	59
Percentage of children giving correct response	37%	47%	49%	49%	45%	43%	33%	32%	32%	21%

Total Tests = 264

Figure 5.

NUMBER OF CHILDREN WHO COULD ACCURATELY SING EACH PITCH OF THE TONE MATCHING TEST

The investigators reported that the pitch E (1st line of the treble staff) was sung accurately by the largest number of children. In addition, it was found that from middle C up to second space A was sung most easily by all children even though they may have had a larger total singing range.

The information reported for the present study agrees with that of Jersild and Bienstock to a remarkable degree. The principal difference seems to be in the number of children able to reproduce the pitches. Relatively fewer children in this study could sing accurately than in the earlier study. This is not unusual since the present study was based to a large extent on responses of disadvantaged children who had little previous singing experience.

The ability of Preschool Children to Sing Intervals

The interval matching test contained five separate intervals: a descending minor third, an ascending major third, an ascending and a descending perfect fifth, and a descending major sixth. By far the greatest number of children (186) were able to accurately sing the descending minor third interval. This finding confirms the teachings of Carl Orff and Zoltan Kodaly, both of whom have found this interval to be the easiest for the children with whom they have worked. The two perfect fifths were sung correctly by the next largest number of children and apparently the direction of the interval does not affect the number of children that can reproduce it. The smallest number of children were able to reproduce the major sixth, perhaps because of the range of the interval and perhaps because of the pitch at which it was presented. The intervals, number of children singing them, and the percentage of the total number of children are included in Figure 6.

Children's Abilities to Sing Major and Minor Tonal Patterns.

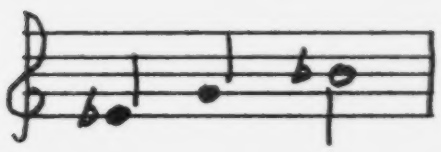
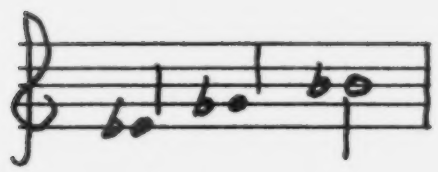
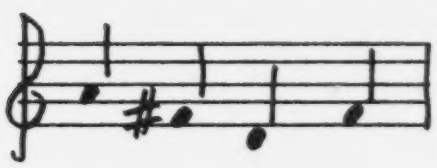
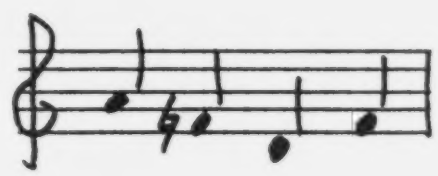
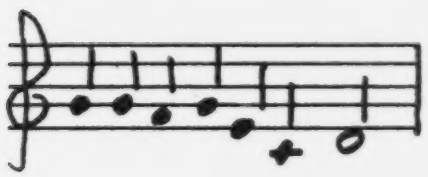
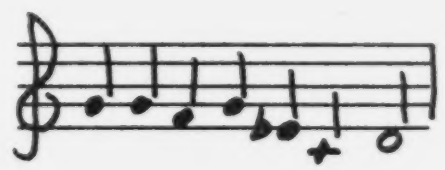
The unfamaliar phrase repitition test contained a total of ten tonal patterns. Of these, three major patterns (Nos. 1,4, & 9) were identical to three corresponding minor patterns (Nos. 2,5 & 10), the only difference being tonality. The interesting fact about these patterns is that a greater number of children were able to accurately sing the minor version of each than the comparable major grouping. The length (number of pitches) also influenced the children's accuracy, since fewer children were able to correctly repeat the longer patterns. The patterns and numbers of children correctly singing them are displayed in Figure 7.

The data from the phrase repitition test and the interval matching test seem to suggest that perhaps minor tonalities are sung with greater ease by preschool children than are major. If this is, in fact, a valid

Interval					
Number	96	117	119	186	67
% of total	34%	41%	42%	66%	24%

Figure 6.

NUMBER OF CHILDREN WHO COULD ACCURATELY
SING EACH INTERVAL OF THE INTERVAL MATCHING TEST

Major		Minor	
			
Number	99	Number	108
% of total	34%	% of total	38%
			
Number	70	Number	91
% of total	25%	% of total	32%
			
Number	17	Number	18
% of total	6%	% of total	6%

N = 284

Figure 7.

NUMBER OF CHILDREN WHO COULD ACCURATELY
SING COMPARABLE MAJOR AND MINOR MELODIC PATTERNS

assumption, many of the songs selected for preschool use, especially those employed in the initial phases of the program, should be in the minor mode. Results which are based on so few comparisons, such as these, must, of course, be regarded as merely indicative of possible facts, rather than conclusive, and should be interpreted with caution.

Selected Non-musical Factors

Data on five factors were available for some of the groups. The chronological age, in months, of each child participating in the study (128) was obtained from the records of each of the four preschools. The daily attendance (to the music lessons) of each child was recorded after each session by the experimental teachers. An individual Stanford-Binet Intelligence Test was administered to each child in the two disadvantaged groups and from these, the mental ages and IQ scores of the children were obtained. At the conclusion of the training period, each experimental teacher was asked for a progress estimate for each child. The scale for these ratings was 1 (lowest) through 5 (highest). A rating of three was assigned to those children demonstrating "average" progress, a 4 or a 2 to those above or below this average, and a 5 or a 1 to those who were particularly outstanding. This rating represents the teachers' assessment of improvement combined with final musical ability. It may also be regarded (as are most teacher ratings) as a partial indicator of the childrens' attitudes toward the class, the subject matter, and/or the teacher. A child who had developed a negative attitude toward one or more of these, would not be expected to display a great deal of visible improvement. Conversely, one who maintained a favorable attitude during the experimental period would probably demonstrate comparatively more progress - at least, in the opinion of the teacher.

The data for these five factors are presented in Table 17.

Chronological Age. The mean age of the 128 children who participated in the study was 68 months. As shown in the table, none of the groups deviated from this mean to a great extent. The mean CA of the disadvantaged-control group was four months less than the overall mean while that of the advantaged-control group was two months above. The variability of the disadvantaged-control children was almost double that of any of the other groups. This resulted from the inclusion of a few older children in the group, which was primarily younger children. The CA range for this group extended from 61 to 77 months. Actually, some of these children were of elementary school age but for some unknown reason, were still attending preschool. The mean chronological

Table 17.

DATA ON SELECTED FACTORS FOR
ALL FOUR PRESCHOOLS

	Disadvantaged Experimental		Advantaged Experimental		Disadvantaged Control		Advantaged Control	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Chronological Age (CA) (in months)	69	4.4	69	3.7	64	8.8	70	4.1
Mental Age (MA) (in months)	66	8.4	no data		55	7.2	no data	
Intelligence (IQ)	95	12.7	no data		86	10.8	no data	
Teachers' Ratings (scale = 1-5)	3.8	1.5	4.0	1.6	no data		no data	
Attendance (in days)	16.5	4.3	17.7	2.0	no data		no data	

ages and variabilities of the remaining three preschool groups were nearly identical.

Mental age. Information on this factor was available for only the disadvantaged children. As shown, the mean mental age of the experimental group was eleven months above that of the control group. In both instances, the mental ages were less than the chronological ages.

Intelligence. The Stanford-Binet Intelligence Test is standardized for a mean of 100 (IQ). The mean score for the disadvantaged-experimental children was five points less than this. The range of IQ for this group extended from 64 to 117. The mean IQ of the disadvantaged-control group was only 86, very near the lower extreme of what is generally regarded as the normal range of intelligence. The IQ range for this group was 66 to 109 and was less variable than the experimental group.

Teacher Ratings. Since the experimental teachers were only in contact with the children from the experimental schools, no data appears in the table for the control groups. The composite mean ratings and variabilities for the two experimental preschools were quite similar. These ratings were assigned on the basis of an average of 3, thus the teachers apparently felt the progress of the children was above average.

Attendance. This factor was also available for just the two experimental groups. The disadvantaged children were less consistent in their attendance. There were eight students (one-fourth of the total) who attended all of the lessons and three who attended less than half. The advantaged children had a mean attendance of 17.7 days compared to 16.5 for the disadvantaged children. They were also less variable. Of this group twenty students attended 19 lessons while the least number of lessons attended by any one student was 13.

Correlations of Selected Factors and Posttest Composite Scores.

In order to determine the possible relationship of these factors to the childrens' final level of musical attainment, zero-order correlations were computed between each factor and the mean composite posttest scores for each school. This information is displayed in Table 18. These coefficients indicate that there is little apparent relationship between chronological age and musical ability level. Only with the children from the disadvantaged-control group did CA seem to positively relate to ability. An equally strong negative relationship was apparent

Table 18.

COEFFICIENTS OF CORRELATION BETWEEN SELECTED FACTORS AND COMPOSITE POSTTEST SCORES FOR ALL FOUR PRESCHOOLS

	Disadvantaged Experimental Group	Advantaged Experimental Group	Disadvantaged Control Group	Advantaged Control Group
Chronological Age (CA)	-.25	.12	.26	-.08
Mental Age (MA)	.15	...	.24	...
Intelligence (IQ)	.20	...	-.02	...
Teachers' Ratings	.74	.53	...	...
Daily Attendance	.30	-.17	...	...
Pretest Composite	.66	.88	.97	.92

... = No data for this factor.

in the disadvantaged-experimental group. The two advantaged groups showed less relationship between chronological age and posttest attainment. With these latter groups, a positive relationship was seen with the experimental group and a slight negative relationship appeared in the control group.

The correlations of pretest composite scores with comparable posttest scores were substantially stronger in the control groups than in the experimental groups. This is not unusual since neither of the control schools had an effective program of music instruction, hence the best indicator of final attainment level was the pretest score. The correlations of pre and posttest scores for the experimental groups, however, were lower. Apparently the experimental training program had influenced the outcome of the final posttest to the extent that the pretest score was no longer a good indicator of final ability.

In regard to attendance, there seems to be a fairly strong relationship (.30) between this factor and final attainment, in the case of the disadvantaged children. With the advantaged children, this was not true. A negative correlation coefficient (-.17) between final ability and attendance for this group suggested that advantaged children are able to learn with less than regular attendance. Perhaps they learn quicker and more easily, or, it may be that part of their progress is the result of their home or some other out-of-school environment.

The correlations between teachers ratings and posttest scores are also given in Table 18. The coefficient of .74 for these factors in the disadvantaged group was considerably larger than the .53 obtained for the same factors in the advantaged group. As previously suggested, these ratings probably reflect, to some degree, the students' attitudes toward the teaching effort and their willingness to respond. Apparently a positive attitude on the part of the disadvantaged children coincided with their actual ability as shown on the posttest than it did with the advantaged-experimental group. Alternatively, the larger gains of most of the disadvantaged children made it possible to rate their progress with greater accuracy.

Measures of mental age were available for only the two disadvantaged groups of children. With both of these, a positive relationship was found between mental age and final attainment. The coefficients, however, were not noticably large. Similarly, the coefficients between intelligence and posttest scores, for the two disadvantaged groups, were also small.

Correlations of Selected Factors and Composite Gain Scores.

These data are presented in Table 19. As can be seen, most of the factors did not correlate significantly with the amount of gain. Attendance showed a moderate positive relationship to the mean gain of the disadvantaged-experimental group but correlated negatively with the improvement of the advantaged children. Based on the data included in this table, the conclusion may be tentatively reached that none of these factors have an important relationship to mean gain of either group.

Comparative Results of Experienced and Inexperienced Teachers.

One of the purposes of this study was to make comparisons between results obtained by experienced and inexperienced teachers. The teaching staff employed in this study consisted of one highly trained teacher with considerable experience and three relatively untrained university students with no experience in teaching. A complete description of the teaching staff appears in Chapter 2.

It was reasoned that if lessons could be so structured that little or no outside supervision would be needed by inexperienced teachers, the techniques incorporated in them might be usable by other teachers on a wider scale. In actual practice little specific direction was needed by the teachers although weekly conferences were held in order to coordinate the presentation of the various musical concepts and to review teaching methods. It was further reasoned that to be effective on a large scale, the results obtained by the two types of teachers must be comparable.

The data for the comparisons are included in Table 20. The initial mean ability level of the students assigned to the experienced teacher was considerably lower than the remaining children who were assigned to the inexperienced teachers. In the case of the disadvantaged groups, the mean pretest score of the students allotted to the experienced teacher was 40% less than that of the remaining children. In the case of the advantaged children this difference was about 25%. These differences were not discovered until after the teaching phase of the investigation had been concluded since the pretest and posttest test tapes were not evaluated until that time.

In terms of improvement, the disadvantaged children taught by the inexperienced teachers had a higher mean gain score (67.5 compared

Table 19.

COEFFICIENTS OF CORRELATION BETWEEN SELECTED FACTORS AND COMPOSITE GAIN SCORES FOR ALL FOUR PRESCHOOLS

	Disadvantaged Experimental Group	Advantaged Experimental Group	Disadvantaged Control Group	Advantaged Control Group
Chronological Age (CA)	-.23	.09	-.39	-.17
Mental Age (MA)	-.05	...	-.30	...
Intelligence (IQ)	-.01	...	.15	...
Teachers' Ratings	.35	.24	...	...
Daily Attendance	-.33	-.04	...	...
Pretest Composite	-.12	-.18	-.16	-.13

... = data not available for this factor.

Table 20.

COMPARATIVE RESULTS OF EXPERIENCED AND INEXPERIENCED TEACHERS

	Teachers	
	Experienced	Inexperienced
Pretest Mean Scores:		
Disadvantaged groups	33.8	56.3
Advantaged groups	62.4	81.3
Posttest Mean Scores:		
Disadvantaged groups	94.3	123.8
Advantaged groups	118.0	121.6
Posttest Scoring Range:		
Disadvantaged groups	8 to 159	17 to 203
Advantaged groups	24 to 192	22 to 192
Gain Score Means:		
Disadvantaged groups	60.5	67.5
Advantaged groups	55.6	40.3
Range of Gain Scores:		
Disadvantaged groups	2 to 123	-7 to 147
Advantaged groups	17 to 101	-13 to 89

to 60.5) than those taught by the more experienced teacher. On the other hand, the advantaged group, instructed by the experienced teacher, gained substantially more than those taught by the inexperienced teachers (55.6 compared to 40.3). In both cases the variability of the gain scores was much greater with those children working under the inexperienced teachers.

In terms of final musical attainment (posttest scores) the children from both environments, taught by inexperienced teachers, had the highest mean scores, not an entirely unexpected result since the pretest scores of these children were also considerably higher than the group taught by the experienced teacher.

Overall, the differences in results obtained by the various teachers were negligible. Perhaps the most noticable difference was the tendency for the children taught by the experienced teacher to progress more consistently, as a group. There was considerably less variation in the amount of gain evidenced by each child under the experienced teachers. By way of comparison, the gains of the children taught by the inexperienced teachers were more variable and a few of the children even regressed slightly from pre to posttest. Wide variability, as Bloom has indicated 16/, is a characteristic commonly encountered in learning experiences of preschool children. Perhaps as the data suggests, an experienced teacher is better prepared to control this tendency toward extreme variability.

Footnotes for Chapter Four

[11]John D. Hill. "A Study of the Musical Achievement of Culturally Deprived Children and Culturally Advantaged Children at the Elementary School Level." (Unpublished Doctoral dissertation, University of Kansas, 1968).

[12]E.F. Lindquist. Design and Analysis of Experiments in Psychology and Education. (Boston: Houghton Mifflin Company, 1956)

[13]E.F. Lindquist. (see footnote 12)

[14]F.J. McGuigan. Experimental Psychology (Englewood Cliffs, New Jersey: Prentice-Hall, Second edition, 1968).

[15]Arthur T. Jersild and Sylvia F. Bienstock. "The Influence of Training on the Vocal Ability of Three Year Old Children," Child Development Volume 2, 1931. Pp. 272-291.

[16]Benjamin S. Bloom. Stability and Change in Human Characteristics (New York: John Wiley and Sons, 1964).

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The disadvantaged child in the United States today is usually unable to achieve in a manner comensurate with that of advantaged children. The primary reason for this is probably the unfavorable environment from which he comes. In its simplest form the solution to this problem has two possibilities: either alter the environment before the child is born into it, or, try to remedy the deficiencies in the child before they become stabilized. Once this stabilization occurs, the likelihood of a change in relative ability is extremely remote. It is generally agreed that the potential for musical achievement (aptitude) becomes stabilized in most individuals at an early age.

The present study was designed to determine the effectiveness of a structured program of instruction for improving the musical abilities of disadvantaged preschool children. The objective was to attempt to raise their level of attainment to a point where there was little or no difference in group ability between disadvantaged and advantaged children. Based on the results presented in Chapters Three and Four, the following tentative conclusions are offered:

1. The musical ability level of the typical disadvantaged child is initially inferior to that of the typical advantaged child. (significant at the .01 level) A structured remedial program of music instruction, such as the one employed in this investigation, is effective for improving this ability level. The disadvantaged children who were exposed to such a program were significantly better than a similar group of disadvantaged children who did not receive the instruction. Moreover, the program of instruction appears to be effective to the point that in overall musical ability, as tested, there was no difference between the disadvantaged child after remedial training and the advantaged child who had not received the training.

2. In terms of time to learn, the typical disadvantaged child requires a substantially longer period of time to learn musical concepts than does the advantaged child. This is probably due to the interaction

of several characteristics common in disadvantaged children:

a. An irregular learning rate, perhaps caused by an emotional balance which varies greatly from day to day.

b. A shorter attention span compared to advantaged children.

c. A subnormal level of intelligence.

d. An almost complete lack of previous experiences with music to which new learnings may be related.

3. In terms of amount of learning, the typical disadvantaged child is capable of assimilating the same number of concepts as the typical advantaged child. However, due to the more regular learning rate of the latter, reinforcement is more easily accomplished and although total learning of the two groups may be similar, retention is probably greater with advantaged children than with disadvantaged, over a period of time.

4. The patterns of growth for disadvantaged and advantaged children appear to be the same where a structured program of musical training is provided. The principal difference is that the disadvantaged child starts at a much lower initial level and thus must receive more intensive training in order to reach the level of the typical advantaged child.

5. Chronological age, mental age, and intelligence seem to be only incidentally related to musical attainment (posttests) and even less to amount of improvement (gain scores). The only one of these factors to show a positive relationship to final musical ability of both of the disadvantaged groups was mental age.

6. Regular attendance to music class seems to be a factor in the amount of learning displayed by the children of disadvantaged environments. Attendance is not a factor, however, in the improvement of advantaged children.

7. The comparative results of a structured program taught by experienced and inexperienced teachers reveals little difference between the two. Only one consistent difference appeared. The variability of the groups taught by the experienced teacher was less than those taught by inexperienced teachers.

8. The voice range of preschool children appears to be slightly more restricted at the upper limits than has been found in previous studies. This may be due to physical differences in the children studied.

9. Incomplete data suggest that children sing more easily in minor tonalities than in major. If subsequent research substantiates this conclusion, more minor songs should be used with preschool children than is now customary.

11. A song approach to teaching music in which the children sing various songs accompanied by a piano, seems to be ineffective for raising the musical ability level of preschool children.

Overall, the type of music instruction offered the children in this investigation is effective for all, regardless of environmental background. There are, however, subtle differences remaining which are not reflected in a musical concept test of the type employed in this study.

One of these is the lack of ability in many disadvantaged children, after instruction, to sing an entire song, or sometimes an extended musical phrase, without stoppages in rhythm, loss of tonality, and in some instances regression (starting over). While the length of time encompassed by the study was sufficient for teaching certain isolated intervals, pitches, patterns, etc. it was not long enough to foster the more complex understanding of musical phrasing. In short a greater length of time is needed to reach the level of attainment where the child is sufficiently independent, musically, to maintain pitch and rhythm throughout an entire song.

A second characteristic closely associated with the above, is the difference in attitude of disadvantaged and advantaged children. For the latter music is a natural activity, they like to sing to create melodies and enjoy participating in music. The typical disadvantaged child also enjoys participation in music, but for him it is not a natural spontaneous activity.

These differences are undoubtedly attributable to the lack of experience and probably would be overcome by a sustained program of musical instruction such as that offered in this study.

Recommednations

The following suggestions are offered for future research in this area.

1. Replication of this study needs to be initiated with children in other preschools and in other locations to verify the findings.

2. A longitudinal study which includes the same group of children through several successive years needs to be undertaken in order to check on retention and the long range influence of the program on later learning ability.

3. A manual should be assembled incorporating materials and techniques used in this study for distribution to Headstart Centers. In conjunction with this a short term workshop (2 to 5 days) should be held for familiarization of the teachers with the information in the manual.

4. Further study needs to be done in the area of child voice ranges and tonality preference. If minor tonalities are indeed more easily performed this could have important implications for the initial instruction of children in the elementary schools.

APPENDIX A

SCORE SHEET FOR
HILL PRIMARY MUSIC ABILITY TEST

HILL PRIMARY MUSIC ABILITY TEST SCORE SHEET

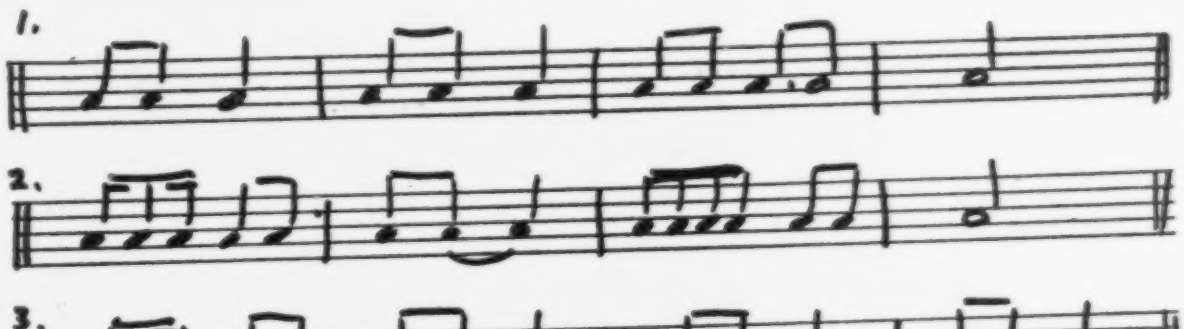
I.	Interval Matching	20 points	_____
II.	Phrase Repitition	96 points	_____
III.	Tone Matching	30 points	_____
IV.	Familiar Song Repitition	15 points	_____
Total Melodic Achievement		161 points	_____

V.	Tap Recognition	15 points	_____
VI.	Tap Repitition	30 points	_____
Total Rhythmic Achievement		45 points	_____

Summation:

Total Melodic Achievement	161 points	_____
Total Rhythmic Achievement	45 points	_____
Composite Music Ability	206 points	_____

V.



VI.

APPENDIX B

THE FIRST TEN LESSON PLANS USED IN THIS INVESTIGATION

LESSON ONE

General Objectives:

1. Introduce teacher to students.
2. Establish rapport between teacher and students.

Musical Objectives:

1. Encourage rhythmic freedom. Encourage children to respond freely with large physical movements.
2. Tonal freedom. Encourage all children to sing whether they do so correctly or not.

Songs for this lesson:

1. I'm a Little Teapot (unaccompanied)
2. My Little Thumbs are Moving (unaccompanied)
3. Eency Weency Spider (unaccompanied)
4. Echo games (unaccompanied)

Procedures:

1. I'm a Little Teapot:
   a. Show outline drawing of teapot in your poster tablet. Briefly explain how a teapot is used for those who may be unfamiliar with it.
   b. Illustrate movements as you sing song for the children.
   c. Have the children stand. Children should then sing song and do movements along with teacher.
   d. Repeat if necessary. Encourage uninhibited rhythmic response.

2. My Little Thumbs are Moving:
   a. Ask children to sing along with you.
   b. Simply start song using proper movements. If children do not join in as you sing, stop and ask them to do so. Start song again. Repeat verse 1 until they can do it.
   c. If they are singing by the end of verse 1, stop, and say "Now let's add our fingers".
   d. Start singing second verse, children will join in.
   e. Use same procedure for subsequent verses. Stop between each and announce what you are adding. Add in this order: thumbs, fingers, arms, feet, legs, ears.

Use only as many verses as children can adequately pronounce.

3. Eency-weency Spider:
   a. Present this song by rote, using proper arm movements.
   b. Have children sing along with you.
   c. Encourage large arm movements and uninhibited singing. Repeat as needed.

4. Echo games:
   a. Tell children you would like to play a game with them.
   b. Do a few echoes between teacher and group to establish the procedure. Use only a minor third (so mi). Use hand signs to get children to use same pitch as you sing.
   c. If some students obviously understand and can do it, ask them to perform individually. (echoing the teacher)
   d. Suggested words:
      "Hello" (Hello)
      "How are you" (I am fine)
      "What is your name" (My name is _____)
      Use any other short phrases or single words you feel are appropriate to the situation. Note those that work better than others.

Note: You may close this lesson verbally by saying this is all we are going to do today, or, you may incorporate the closing into the echo game by singing "This is all we'll do today" (this is all we'll do today) "See you tomorrow" (See you tomorrow" "Goodbye" (Goodbye). If you use the latter suggestion, do each phrase somewhat softer than the preceding so that goodbye is quite soft. This will discourage any eratic behavior which might otherwise result.

LESSON TWO

General Objectives:

1. Continue establishing proper rapport with children.
2. Begin conscious effort to learn names of all children in the group.
3. Begin identifying those with specific rhythmic or tonal deficiencies.

Musical Objectives:

1. Continue establishing rhythmic freedom through review of previous songs.
2. Continue encouraging tonal freedom through echo games.
3. Introduce the concept of the tempo beat.

Songs for this lesson:

1. I'm a Little Teapot (unaccompanied) review
2. Eency-weency Spider (unaccompanied) review
3. When the Saints go Marchin' In (unaccompanied) new
4. Paw-Paw Patch (ukulele accompaniment) new

Procedures:

1. Begin by reviewing Teapot song.
   a. Ask if they remember the song. If not, follow same procedure as in Lesson 1 and present song again. Emphasize physical movement.

2. When the Saints Go Marchin' In:
   a. Start by clapping tempo beats of song the speed you wish to sing it. (About ♩ = 34)
   b. When all have understood and are clapping generally together, begin singing the song while teacher and students continue to clap the beat.
   c. After you finish the first verse of the song, stop and correct any errors.
   d. Try having children clap and sing the song. Always begin the clapping first, start song after correct tempo is reached.

3. Paw-Paw Patch:
   a. Present song by rote with baritone ukulele accompaniment.
   b. Repeat the song again if needed.
   c. Have children sing the song.

Lesson 2 (cont'd).

d. This song may be repeated for reinforcement by substituting names of various children in the class for "pretty little Ellie" used in the printed text. Example: if there is a boy named Bruce in the class, sing "where oh where is little Bruce" etc. In any case I would omit the word "pretty" from the text when you present the song.

4. Eency-weency Spider:
   a. Close the session with review of this song.
   b. Proceed in same manner as Lesson 1.
   c. Children should sing this song standing. Emphasize large muscle movements.

LESSON THREE

General Objectives:

1. Complete the memorization of names of children in the group.
2. Continue identifying those with specific rhythmic and tonal difficulties.

Musical Objectives:

1. Continue work of encouraging children to respond to tempo beats.
2. Direct attention of children to the resting tone of songs.
3. Emphasize pitch accuracy of children.

Songs for this lesson:

1. Eency-weency Spider (unaccompanied) review
2. When the Saints Go Marchin' In (ukulele accompaniment) review
3. Paw-Paw Patch (ukulele accompaniment) review
4. New River Train (ukulele accompaniment) new

Procedures:

1. Eency-weency Spider.
   a. Begin with same song you closed lesson 2 with, emphasis is still on large muscle movements.
   b. Encourage children to respond to the song.
   c. Repeat if you feel it is desirable.

2. Paw-paw Patch.
   a. Substitute various children's names in the song. They will enjoy this and it will help you learn their names better.
   b. Attempt to make a game of it.
   c. Perhaps allow the children to select the name for the next verse.

3. New River Train.
   a. Show a picture of a train in your sketch-book. Perhaps a short discussion of trains
   b. Sing the song first for the children, use rote technique
   c. If song is accepted by children, use sand blocks or similar instrument to imitate a train. Select child with good rhythm for this activity. Perhaps do the song with clapping in order to determine who you should allow play the rhythm instrument. Make a point of the fact he (or she) clapped correctly and this is why you are selecting him to play.

Lesson Three (cont'd)

4. When the Saints Go Marchin' In.
   a. Review with clapping as before (lesson 2)
   b. Accompany with uke second time through.
   c. Encourage all to sing.
   d. Introduce the resting tone. Have children stand while they sing the song then ask them to sit when they think the resting tone appears (last note of the song). Have them stand while you sing a verse and sit on the last note. Note those who can hear when the last note is coming and those who don't.

Note: With all the songs in this lesson, emphasize pitch accuracy with hand signals whenever you hear mistakes. Short drills (two or three times on a tonal pattern) will be appropriate. Do not overdo this so they become tired. If you can improve one pattern, proceed and work the others some other time.

Materials needed for this lesson:

1. Baritone ukulele
2. Sketch-book with train drawn in it.
3. Rhythm instrument wuch as sand blocks, scrapper, or similar sounding instrument.

LESSON FOUR

General Objectives:

1. Continue identifying those with tonal and rhythm problems.

Musical Objectives:

1. Continue emphasizing consistent tempo beats (steady rhythm)
2. Continue pointing out the tonal center (resting tone)

Songs for this lesson:

1. New River Train (ukulele accompaniment) review
2. Saints Go Marchin' In (ukulele accompaniment) review
3. Eency Weency Spider (unaccompanied) review
4. Twinkle twinkle little star (ukulele accompaniment) new

Procedures:

1. Saints Go Marchin' In.
   a. Review with ukulele accompaniment.
   b. Review with clapping (they clap you sing). If you think they can do it, you sing and play ukulele while they clap the tempo beats.
   c. Note who seems best at maintaining consistent rhythm.
   d. Ask the two best to select an instrument each from three or four you have brought along and have them play it while the rest sing the song again. Don't hand out the instruments, lay them on a table and let the child make his choice.
   e. Be liberal with praise <u>if</u> they do it right. Don't praise someone for the wrong response.

2. n New River Train
   a. Review with ukulele accompaniment as in previous lesson.
   b. Emphasize the resting tone idea.

3. Twinkle twinkle little star
   a. Show a picture of window, star, etc. at night in your sketch-book.
   b. Introduce the song by rote, after discussing the picture briefly.
   c, Emphasize pitch accuracy with hand signs, especially on the interval of a fifth at the beginning of this song.

4. Echo games.
   a. Select a few intervals from Twinkle twinkle little star that seem difficult for the children and play echoes with them.
   b. Limit your games to one or two intervals.

5. Eency-weency Spider
   a. Close the lesson by singing this song.
   b. By now they should have the movements clearly in mind.
   c. If this is true, you might try accompaniment on ukulele.

Materials needed for this lesson:

1. Baritone ukulele
2. Sketch-book with picture of star as seen from a window.
3. 3 or 4 rhythm instruments. (perhaps some tambourine, drum, blocks, or rhythm sticks)

LESSON FIVE

General Objectives:

1. Continue identifying those children with specific tonal and/or rhythm difficulties.

Musical Objectives:

1. Continued emphasis on maintaining consistent tempo.
2. Continued emphasis of sound of resting tone.
3. Introduction of rhythmic patterns (aurally).

Songs for this lesson:

1. New River Train (ukulele accompaniment) review
2. When the Saints go Marchin' In (ukulele accompaniment) review
3. Do Lord (ukulele accompaniment) new song
4. Twinkle Twinkle Little Star (ukulele accompaniment) review
5. I Love Little Willie I Do I Do (ukulele accompaniment) new song

Procedure:

1. Saints Go Marchin' In:
   a. Review with ukulele accompaniment
   b. Let individuals sing the song while the remainder clap (you play)
   c. If individuals do not wish to sing, have small ensemble perform (3-4 children)

2. New River Train:
   a. Review with ukulele as before.
   b. Emphasis should be placed on singing in tune.
   c. Point out the resting tone, perhaps have them stand and sit on the resting tone when they get to it.
   d. You sing it, they listen, standing, with eyes shut. Have them sit when they think the resting tone has arrived (still with eyes shut so they can't see each other)

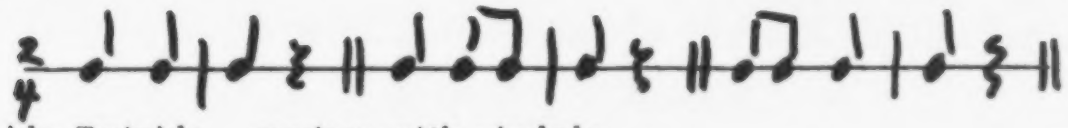
3. Do Lord:
   a. Introduce song by rote.
   b. They clap while you sing second time (tempo beats)
   c. Have them sing and clap (or just sing while you play)

Lesson Five (cont'd)

4. I Love Little Willie (ukulele accompaniment) new
   a. Introduce song by rote.
      (this will be the first triple meter song they have had
      however, do not point this out unless someone asks)
   b. Have children sing the song.
   c. If they accept the song, try using some of their names
      instead of Willie. k Perhaps change word "love" to "know" or
      "see". Judge by the attitude of the children about this.

5. Echo game:
   a. Set tempo by having them clap knees, hands, knees, hands
   b. Say the following rhythms as everybody claps:
      -use la, la, la
      -use 1 ne 2
      -or fit word such as "I see you"
      Mix these up but do the entire series in rhythm without break.

      Rhythms:



. Twinkle Twinkle. review with ukulele.
   a. Review, children should remember this song.
   b. Be sure all can sing the beginning fifth. Use hand signs.
      Go around the class for -8 students and have them sing
      the open fifth.

7. If you still have time and the children wish to continue, review any
   of the previously learned songs:
   a. Eency Weency Spider
   b. I'm a Little Teapot
   c. My Little Thumbs are Moving
   d. Paw-Paw Patch
   e. Echo games such as "hello" etc.

Materials needed for this lesson:

1. Baritone ukulele

LESSON SIX

General Objectives:

1. Continued identifying of children with tonal and/or rhythm difficulties.
2. Write the names of all children in your notebook; after each write a brief (two or three word) diagnosis of his singing and rhythmic ability. By now you should know who can sing on tune and who is a remedial case; and who can maintain tempo and clap rhythms, or who is remedial case.

Musical Objectives:

1. Emphasis on resting tone
2. Emphasis on tempo
3. Introduce the term meter and how it works in relation to tempo.

Songs for this lesson:

1. New River Train (ukulele accompaniment) review
2. Muffin Man (ukulele accompaniment) new
3. Do Lord (ukulele accompaniment) review
4. Pop Goes the Weasel (unaccompanied) new
5. I Love Little Willie (ukulele accompaniment) review

Procedures:

1. Do Lord:
   a. Review, reteach by rote if needed.
   b. Emphasis on resting tone.

2. Do you know the Muffin Man:
   a. Introduce first verse by rote.
   b. Children sing while teacher accompanies.
   c. Sing one line of second verse to show how it fits in.
   d. Sing whole second verse with children, drop out when they are going along by themselves.
   e. Try singing whole song (children) without your help. Assist only when they forget.

Lesson Six (cont'd)

3. New River Train:
   a. Review with ukulele accompaniment.
   b. Perhaps show picture of train from your sketch-book
   c. Discuss how train sounds.
   d. Lay out rhythm instruments and have two or three best children (rhythmically) select instruments.
   e. Sing song with class while they perform sound of a train on rhythm instruments. Try to get them to perform either the tempo beat or meter.

4. Pop Goes the Weasel:
   a. Sing song by rote without accompaniment.
   b. Clap your hands on word "pop"
   c. Sing song again and have children listen, clap their hands on "pop".
   d. Repeat as needed to get them to hear "pop"
   e. Perhaps combine this with emphasis on resting tone. Have children stand, clap hands on "pop", sit on last note of song.

5. Close with song of the children's choice.

6. If you have time, perform some rhythm echoes and/or tonal echoes.

Materials:

1. Sketch-book (if desired)
2. Baritone ukulele
3. Three rhythm instruments suitable for making train sounds.

LESSON SEVEN

General Objectives:

1. Make determined effort to get the non-singer (speaking voice) to use his correct singing voice.

Musical Objectives:

1. Continued work with consistent tempo and resting tones.
2. Introduce difference between triple and duple songs.

Songs for this lesson:

1. Hickory Dickory Dock (triple meter) new song autoharp accompaniment.
2. Muffin Man (duple meter) review (autoharp accompaniment)
3. Do Lord (duple) autoharp accompaniment review song
4. Pop Goes the Weasel (autoharp accompaniment) triple song
5. Lucy Rabbit (duple) new song

Procedures:

1. Muffin Man:
   a. Review with autoharp accompaniment.
   b. It may be appropriate to explain the autoharp or at least mention it.
   c. Introduce the idea of duple meter. Clap the meter (knees, hands)

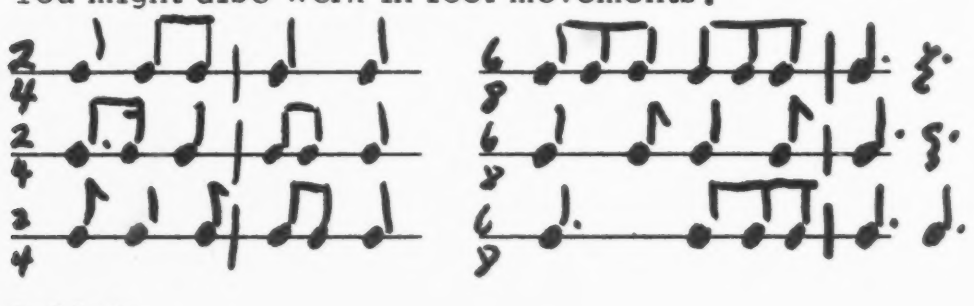
2. Hickory Dickory Dock:
   a. Introduce by rote for those who do not know it.
   b. Point out the difference in the sound (triple) as compared to Muffin Man. Have them clap triple while you sing song through slowly.
   c. Watch to see who needs help. When majority seem to be able to grasp triple meter, go to next song.

3. Do Lord:
   a. Identify this as duple. You sing and let children decide.
   b. Have them clap and sing song.

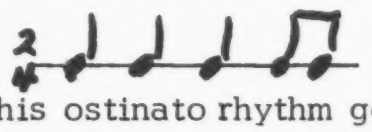
4. Pop Goes the Weasel:
   a. Perform as before emphasizing resting tone and clap on "pop"
   b. Identify (let them try first) this song as triple. You sing it slowly while they experiment with clapping duple and triple along with your singing.
   c. Sing again if desired, together.

Lesson Seven (cont'd)

5. Echo games:
   a. Clap these patterns, speak these patterns by la-la, and rhythm syllables. Do the whole series in strict tempo. You might also work in foot movements.



6. Lucy Rabbit:
   a. First, introduce the rhythm. knees, knees, knees, clap-clap in this rhythm:



   b. After they have this ostinato rhythm going, you sing the short verses, and they sing echos all the while doing the rhythm.
   c. Instead of knees, perhaps bring a few rhythm sticks, or wood blocks to play the three quarter notes. Two or three children could perform the quarters on rhythm sticks, then others could do the clapping.
   d. Feel free to make up or repeat phrases to make the whole thing longer.

7. Close session with anything from previous repertoire:
   a. Eency Weency Spider
   b. I'm a Little Teapot
   c. My Little Thumbs
   d. Paw-Paw Patch
   e. Echo games "hello"
   f. New River Train
   g. I Love Little Willie
   h. When the Saints Go Marchin' In
   i. Twinkle twinkle Little Star

Materials needed for this lesson:

1. Autoharp
2. 3-4 rhythm stick sets or similar wood sounds (wood blocks, coconut shells, etc.)

LESSON EIGHT

General Objectives:

1. Continued work with those who try to sing in their speaking voices.

Musical Objectives:

1. Continued emphasis on resting tone sound and consistent tempo.
2. Continue pointing out differences in sound of triple & duple songs.
3. Introduce the difference between major-minor sounds by showing songs in both.

Songs for this lesson:

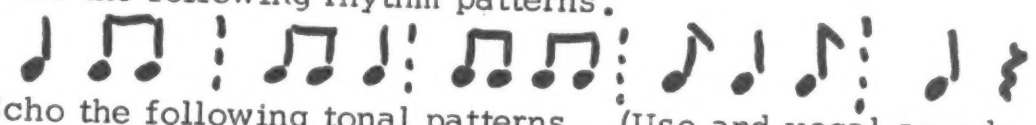
1. Hickory-dickory Dock, (review song) ukulele acccmpaniment
2. Muffin Man (review song) ukulele accompaniment
3. Funny Puppy (new) ukulele accompaniment
4. Paw-Paw Patch (review-new; sing as a minor song) ukulele accompaniment.
5. Any previously learned song.

Procedure:

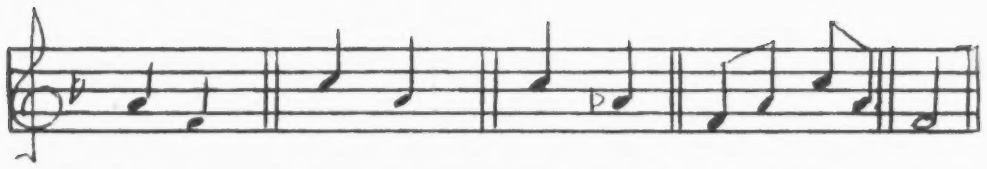
1. Muffin Man:
   a. Review with ukulele accompaniment
   b. Point out the resting tone-see if anyone can identify it first.
   c. Point out the meter of this song by having them clap (knees hands) Get this clapping started then put the song with it while they continue clapping. Emphasize to them how it "feels".

2. Hickory Dickory Dock:
   a. Review this song with ukulele.
   b. Have them clap triple meter while you sing as with Muffin Man. (knees, clap, clap)
   c. Point out the difference in the feel of triple.
   d. Point out, or have someone identify the resting tone.

3. Echo game:
   a. Echo the following rhythm patterns.



   b. Echo the following tonal patterns. (Use and vocal sound; la-la, so-mi; Hel-lo; High-low; etc. (make up some) Try to keep each echo on two consistent beats of tempo. So the whole thing is continuous.



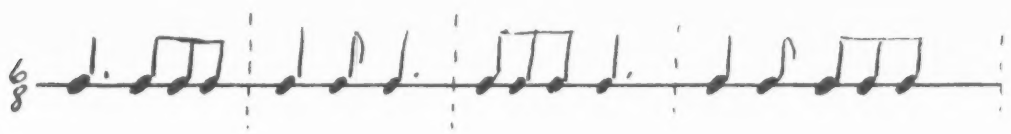
Repeat these as much as needed, mix them if you think children can discriminate between them.

4. Funny Puppy
   a. Introduce the song by rote.
   b. Repeat several times to be sure they all have the minor sound
   c. Make an echo (2-4 times) of the last harmonic minor scale.
   d. Point out the difference in minor and major.

5. Paw-paw Patch (as a minor song)
   a. Perform the song as minor. Ask children if they hear anything different about it. Try to get them to see difference in minor as opposed to major.
   b. Try to have them sing it in minor. (Probably most won't be able to because of their previously having learned it in major)

6. Use any repertoire song (such as Saints Go Marchin' In) and have them march to it, if you have room in teaching area. If you don't have marching room, allow them to march in place without moving. Be sure to note who can and cannot do this yet. Compare the results you get from marching with the way they do it clapping.

7. If you still have time, echo some triple patterns:



Materials:

1. Ukulele

LESSON NINE

General Objectives:

1. Continue work with non-singers as needed.
2. Use incidental echos to improve those who do not have sense of pitch direction.

Musical Objectives:

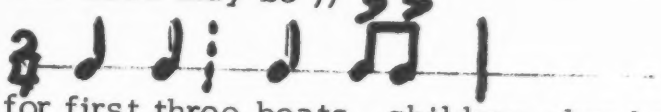
1. Continue emphasis on triple-euple differences
2. Continue emphasis on major-minor

Songs for this Lesson:

1. Lucy Rabbit (review echo song)
2. Funny Puppy (review minor song)
3. Lots of Worms (new minor song)
4. Little Red Caboose (new major song)
5. Pop Goes the Weasel
6. Eency Weency Spider
7. I'm a Little Teapot
8. New River Train

(autoharp accompaniment on all)

Procedure: (Note: From here on, always begin songs with do-mi-so then "ready sing" (or la-do-mi as the case may be))

1. Lucy Rabbit:
   a. Set up a rhythm: 
      Use tambourines for first three beats, children clap hands on last beat.
   b. Get this rhythm going then sing a line, they echo. Etc. through the song. Make up verses and/or vary the tune so that they have to listen to be able to do it.
   c. Try having them stand, shift their weight back and forth on each beat (left, right, left, right, a-la Tom Jones)
   d. The object of this song is consistent tempo and listening in order to echo back correct tonal phrase.

2. Funny Puppy:
   a. Review this song in minor
   b. Practice the harmonic minor phrase several times.
   c. Find resting tone.

3. Lots of Worms:
   a. Use the sketch book to stimulate interest.
   b. Present one verse by rote.
   c. Emphasis on minor sound.

4. Little Red Caboose:
   a. Present by rote with lively accompaniment
   b. Clap tempo beats as they sing after trying once through without clapping.
   c. Emphasize this is a major song. (do-mi-so_

5. Pop Goes the Weasel
   a. Review song with children clapping (once on word "pop")
   b. Ask them to identify whether it is triple or duple.

6. Eency Weency Spider:
   a. Review once.
   b. Ask if it is triple or duple

7. I'm a Little Teapot
   a. Review
   b. Is it triple or duple
   c. If they understand that it is triple, then sing it in duple. Tell them you are going to do this. Try to get them to hear the difference. You may have to sing a phrase in triple, then repeat the phrase in duple. Perhaps have them clap meter while you sing.

8. New River Train:
   a. You may use this song immediately following Little Red Caboose, if someone makes mention of the fact it is about a train also.
   b. Review the song for resting tone, major feeling, and duple.

9. Echo:
   a. Either here or at any other point in the lesson echo rhythm and tonal patterns as follows:

Materials

1. Autoharp
2. Tambourine

General Note:

When using the autoharp, if some children seem to be better at performing a consistent tempo beat, then have them strum the autoharp while you finger the chords. This is a good stimulating procedure and also is one more way to present tempo.

Also, when using autoharp, if children seem ready, strum a chord and have them pick out the tonal center (resting tone of that chord)

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LESSON TEN

General Objective:

1. Continue working incidentally with those who do not have sense of tonal direction and with those who have not found the singing range.

Musical Objectives:

1. Continue emphasizing tempo, resting tone.
2. Difference between duple and triple sounds
3. Difference between major and minor scunds.

Songs for this lesson:

1. Funny Puppy (review minor song) ukulele accomp. on all.
2. Lots of Worms (review minor, add verse 2 and 3)
3. Little Red Caboose (review major, duple)
4. Little White Duck (new major, duple)
5. Lions Roar (new minor, duple)
6. Oats peas beans and barley

Procedure:

1. Funny Puppy:
   a. Review this song as a minor, duple piece.
   b. Try to get them to sing accurately, we will need to use it later for combining with Baker man and it should be well learned before we try that.

2. Lots of Worms:
   a. Use the sketch book again. (add a bug to the picture) Perhaps they can "notice" something different about the picture from how you had it last time)
   b. Present new verses by rote.
   c. Emphasis on resting tone, minor sounds.

3. Little Red Caboose:
   a. Use sketch book - show caboose.
   b. Review for accuracy, and for awareness of resting tone, meter, major or minor.

4. Little White Duck:
    a. Use sketch book with all verses (duck, snake, frog, bug)
    b. Present by rote.
    c. Emphasize major, duple feeling.

5. Lions Roar
    a. Present by rote.
    b. Emphasis on minor duple sound.
    c. Be sure children get the rest before the words "roaring"
    d. Have them stand up for one verse and stamp foot on the rest.

6. Oats Peas Beans and Barley Grow.
    a. Present by rote.
    b. Emphasis is on triple and major sounds.

Materials:

1. Ukulele
2. sketch book
3. sand blocks or some other on train sounds.

General note:

Keep on emphasizing "tuning sounds" do-mi-so-mi-do for major; la-do-mi-do-la for minor.

Keep on inserting clapping of meter whenever the opportunity permits.

Keep on inserting echoes for those who need it. Echo with a good one then get to the person who needs it. Make much use of echo games (short ones) in order to get all to sing on pitch and perform rhythms accurately.

APPENDIX C

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   Eency Weency Spider, p. 92
   Twinkle, Twinkle little star, p. 84
   Pop Goes the Weasel p. 100
   Little White Duck, p. 5
   Kookaburra, p. 188

4. Jaye, Mary T. Making Music Your Own, Kindergarten Book. (Morristown, N.J.: Silver Burdett Company, 1971 - Pre-publication copy, printed in 1970)

   I Caught a Rabbit, p. 108
   Hickory Dickory Dock, p. 109

5. Landeck, Beatrice, et. al. Making Music Your Own, Book One (Morristown, N.J.: Silver Burdett Company, 1968)

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   New River Train, p. 54
   The Muffin Man, p. 33

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   Michael Row the Boat Ashore, p. 77

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8. Ernst, Karl, et. al. Birchard Music Series, Book Two, (Evanston, Illinois: Summy Birchard Company, 1962)

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11. Watters, Loraine, et. al. The Magic of Music (Boston: Ginn and Company, 1965)

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Lucy Rabbit, p. 51
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13. Sur, William et al This is Music, Book Four. (Boston: Allyn and Bacon, 1967)

When the Saints Go Marchin' In, p. 23

14. Traditional, source unknown

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I Love Little Willie
Funny Puppy
Little Red Caboose
Foo foo Rabbit
Baker Man

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